the OIL AND GAS JOURNAL

MARCH 4
1937

DEPARTMENT OF GEOGRAPHY
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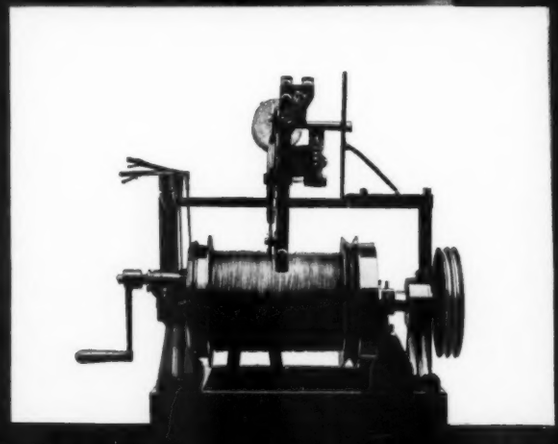

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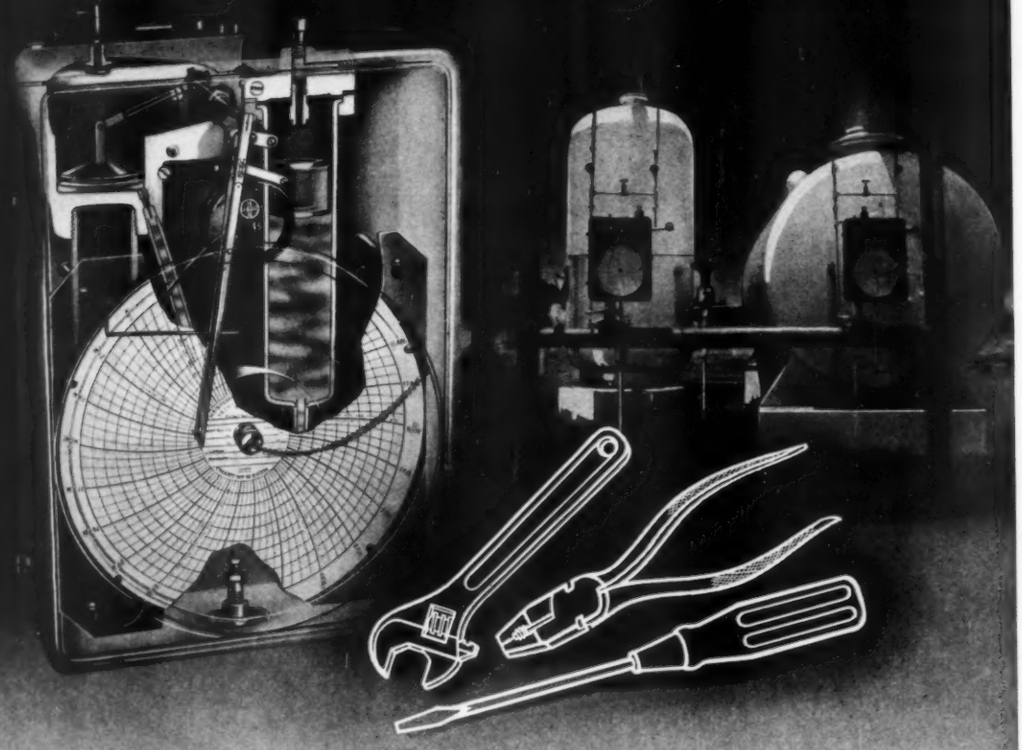

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States Authorize Gains in March Output

DOMESTIC producers, abetted by state regulatory bodies, appeared certain to pass the record crude output of February, in the new month that has just started. With larger nominations from buyers the state control bodies continued their policy of paying no attention to the recommendations of the Bureau of Mines and in most cases have authorized larger production in March.

The Texas Railroad Commission, with nominations in excess of 1,500,000 barrels daily at the recent hearing, has announced a basic state allowable for March of 1,398,514 barrels daily, a production which is at the rate of one-half billion barrels yearly for the state. This March figure represents an increase of 69,039 barrels daily over the early February allowable and 141,914 barrels greater than the bureau's recommendation. Oklahoma's allowable for March is 620,460 barrels daily, 19,580 barrels daily greater than February and 29,760 barrels higher than the government's recommendation. It was indicated in Topeka that Kansas will follow the Texas plan and authorize a state production of 186,968 barrels daily, 950 barrels less than in February and 8,968 barrels in excess of the recommendation. Louisiana's state allowable for March remains practically the same as in February.

Some observers question the soundness of these high allowables for March which will total around 125,000 barrels greater than February and about 200,000 barrels daily more than the government's bureau considers necessary. It is pointed out that gasoline does not show substantial gain in seasonal demand until April and actual withdrawals from accumulated winter inventories usually do not start until May. In the meanwhile the demand for fuels, particularly the overhead furnace oils, has begun to taper off. In this connection it is known that some of the larger companies have reduced their refinery shipments of furnace oils. They have large quantities in storage at terminals and bulk stations and now can see that they are protected as to supplies until the end of the season with lower refinery output. The net result of this situation is to back up these oils at the refineries where they either go to storage or are cracked into gasoline. This obviously will tend to reduce the quantity of crude required by these plants during March. Reflecting this situation overhead distillates are easier marketwise although a few companies with a limited refinery output of their own continue as large buyers.

Production 3,296,850

Decrease 1,681

Crude oil production last week was practically the same as the previous week with no field discoveries of major importance reported. The gasoline tankcar market is not considered strong in most of the refinery areas.

Daily Average Production for Week

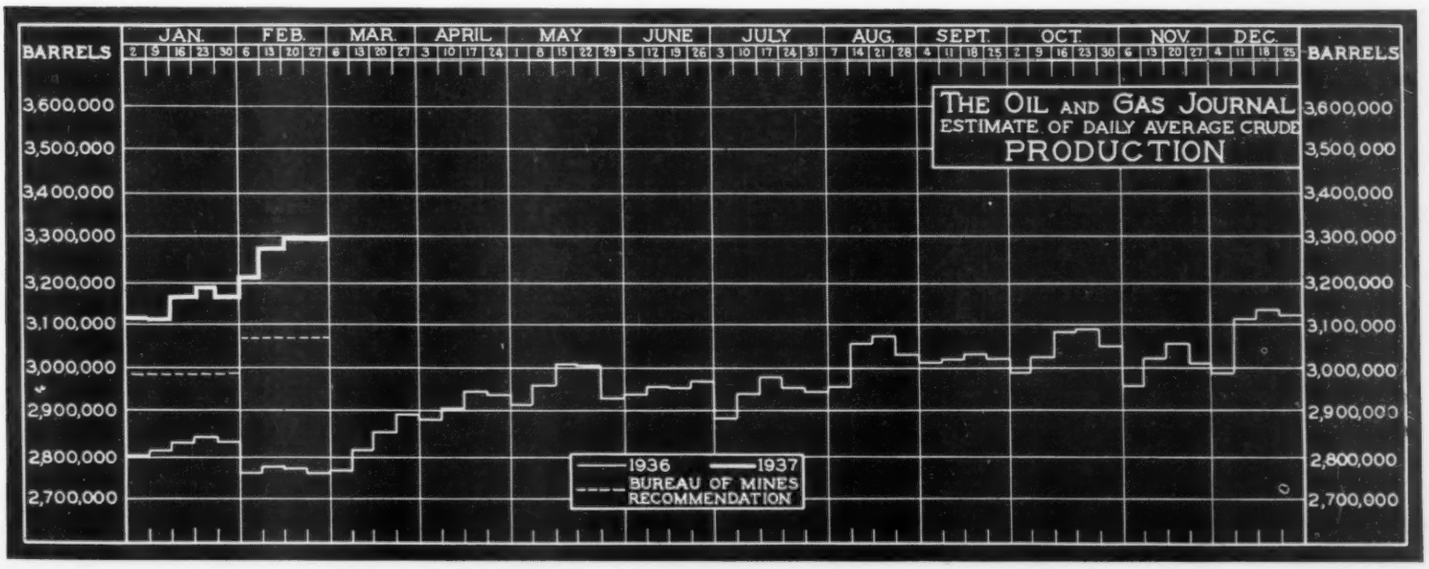
	Feb. 27, 1937	Bur. Mines Feb. est.	Feb. state allowable	Feb. 20, 1937
Oklahoma City	140,050	.....	.....	147,900
Seminole-St. Louis	89,352	.....	.....	89,675
Remainder of State	373,625	.....	.....	371,250
Total Oklahoma	603,000	581,900	581,900	608,825
East Texas	455,497	.....	.....	453,487
West Texas	190,292	.....	.....	190,485
North Central Texas	98,850	.....	.....	99,533
Texas Panhandle	75,885	.....	.....	72,497
East Central Texas	107,696	.....	.....	109,507
Gulf Coast Texas	305,995	.....	.....	303,397
Southwest Texas	106,547	.....	.....	107,564
Total Texas	1,340,762	1,203,400	1,365,194	1,336,470
North Louisiana	69,705	.....	.....	70,400
Gulf Coast-Louisiana	173,400	.....	.....	170,532
Total Louisiana	243,105	225,100	235,700	240,932
Santa Fe Springs	43,000	.....	.....	43,700
Long Beach	62,150	.....	.....	61,250
Kettleman Hills	79,500	.....	.....	79,000
Remainder of State	398,500	.....	.....	402,800
Total California	583,150	573,300	*551,100	586,750
Kansas	183,175	170,000	187,918	186,250
Arkansas	27,475	28,500	.....	27,370
Eastern fields	115,200	114,300	.....	115,100
Michigan	33,133	29,400	.....	29,884
Southeastern New Mexico	97,880	80,550	96,555	94,915
Rocky Mountain area	69,970	62,150	.....	72,035
Total United States	3,296,850	3,068,600	.....	3,298,531

*Recommendation of Central Committee of California Oil Producers.

Crude Oil Stocks in United States

(BUREAU OF MINES ESTIMATES)

Week ending February 13, 1937	286,158,000
Week ending February 6, 1937	286,116,000
Week ending February 15, 1936	311,907,000



Mid-Continent A.P.I. P

Holds Important T

By L. G. E. BIGNELL

The man who left the annual meeting of the Mid-Continent section of the American Petroleum Institute Division of Production in Tulsa, February 25-26, dissatisfied with either the technical program or the entertainment would be very hard to please. More than 600 men attended. It was the first annual meeting of the Mid-Continent section held in Tulsa since the local chapter was organized in 1936. A large delegation of out-of-town oil men were in attendance and Amarillo, Tex., has been chosen for next year's meeting largely because of the well-organized efforts by the delegation representing the Panhandle chapter.

The program committee headed by C. H. Keplinger, Shell Petroleum Corp., Tulsa, secured papers covering practically all phases of production activities. Economics, conservation, taxation, and many phases of modern development and production methods were included. Every technical session was well attended and some of the papers were freely discussed.

Left to right, top to bottom: M. R. SHAFFER, Empire, and D. R. SNOW, Barnsdall; C. E. WRIGHT, British American; AUSTIN ALLEN and G. M. SHANER, of Phillips; JOSEPH E. POGUE, Chase National Bank; H. W. LADD, Stanolind, and H. E. ZOLLER, Shell

In the address of welcome delivered by Frank Phillips, president, Phillips Petroleum Co., Bartlesville, Okla., the development of the oil industry in Oklahoma was described. The need for full cooperation between the practical and technical men in the production division was stressed and Mr. Phillips reviewed his own experience from the "buckboard" days of the industry to the present. He also pointed out the handicap the growth of the tax system has placed upon the petroleum industry and predicted the limit of this evil is not in sight unless consumers of petroleum products are aroused to protest against this unjust and unequal burden upon the product they use.

Dr. Joseph E. Pogue, vice president, Chase National Bank, New York, delivered a paper covering some of the existing or incipient flaws in the planned conduct of the oil business, and a survey of means by which these points of weakness may be strengthened. The following avenues of retrogression were cited by Mr. Pogue: The administration of the quota system in such a manner as to permit the supplying of an inflated demand; the conduct of proration in such a manner as to put a premium on the drilling of unnecessary wells; difficulties of assimilating unneeded discoveries; rigidities in the quota system in the presence of shifting sources of supply, and a possible flow of capital into the industry disproportionate to economic requirements.

After discussing these problems Mr. Pogue concluded that "he had no illusions about the ability of man, individually or collectively, to control major economic forces. We are, however, living in an era when vast experiments are going on looking to the regulation of these forces. The petroleum industry has pioneered in this direction. So far it has done, on the whole, not a bad job. Its responsibility and welfare call for a diligent attempt to improve its operating structure to the end that this essential industry may have the maximum opportunity for progress in a world of rapid change and unexpected development."

The other paper on the Thursday morning program was presented by H. M. Stalcup, vice president, Skelly Oil Co., Tulsa, a "Resume of the Panhandle Gas Problem." Mr. Stalcup retraced the history of the field, legislative and administrative efforts to find solution for some of the problems confronting the state and the operators and a summary of the improvements thus far attained from a conservation standpoint since the passage of Texas House Bill No. 266.

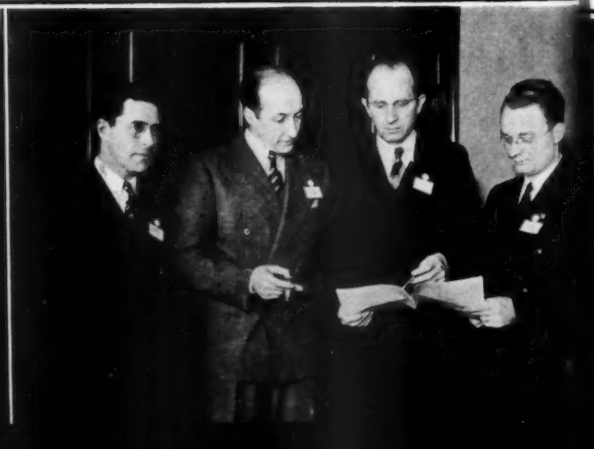
G. A. Holloway, Lee C. Moore & Co., Inc., Wichita, Kans., acted as chairman at the opening session. At the afternoon session Thursday, Oscar Hatcher, independent operator, Ada, Okla., was chairman and the program included papers on production problems published in the engineering section of this issue of The Oil and Gas Journal.

On Friday morning the technical session continued with Max Mahaffey, Empire Gas & Fuel Co., Pampa, Tex., as chairman and included two papers, one by A. W. Walker, Stanolind Oil & Gas Co., Tulsa, on "Modern Well Completion Methods," published in this issue of the Journal. The other paper was on "Plugging Back Wells to Exclude Water" and was presented by C. P. Parsons, vice president, Halliburton Oil Well Cementing Co., Duncan, Okla.

TAXATION DISCUSSED

Tax matters were discussed by Frank B. Long, president, Oklahoma Natural Gas Co., Tulsa. He recommended that every voter make it his business to meet and get acquainted with his representatives in the state legislature. In this way tax problems could be discussed and constructive suggestions offered because relief from burdensome taxes will never be had as long as repre-

Two pictures below: VAN D. BENNETT, British American, the new chairman; OSCAR HATCHER, geologist; C. E. STURDEVANT, Phillips; N. M. HUTCHINSON, Empire; C. H. KEPLINGER, Shell. D. H. COLLINS, Lamtex; C. P. PARSONS, Halliburton; JOHN HAYWARD, Barnsdall; C. H. KEPLINGER, Shell



I. Production Division

t Two-Day Session

sentatives and senators receive letters and recommendations only from persons desiring favors. The tendency will always be for legislators to listen to and heed the expressed demands of the largest number of voters.

Theo. A. Morgan, director, Conservation Division, State Corporation Commission of Kansas, Wichita, Kans., delivered an interesting paper on "Potential Methods in Kansas," stating in part that physical tests are the backbone of the present potential system in Kansas, despite many obvious disadvantages. Physical tests, he said, are expensive, a severe strain on equipment, and at times are not true conservation. Nevertheless, producers do have confidence in these tests, probably for the reason that the actual production can be readily gauged. Potential requirements have materially lightened since the beginning of proration. Percentage declines and the use of factors are becoming more prominent. Future changes in the present potential methods will be determined as a result of the study and attention of producers.

The last technical paper on the program was presented by C. M. Copeland, Helmerich & Payne, Inc., Tulsa, and is published in this issue of The Oil and Gas Journal.

NEW OFFICERS

The officers for the ensuing year were elected by vote cast for the meeting by the secretary and are as follows:

Van D. Bennett, chairman, British American Oil Co., Tulsa; Oscar Hatcher, vice chairman, independent operator, Ada, Okla.; C. E. Sturdevant, vice chairman, Phillips Petroleum Co., Pampa, Tex.; N. M. Hutchinson, vice chairman, Empire Oil & Refining Co., Oil Hill, Kans.; C. H. Keplinger, secretary and treasurer, Shell Petroleum Corp., Tulsa.

Advisory Committee: A. S. Ritchie, chairman, McPherson Drilling Co., Wichita, Kans.; M. R. Shaffer, Empire Oil & Refining Co., Bartlesville, Okla.; H. W. Ladd, Stanolind Oil & Gas Co., Tulsa; J. J. Conry, Carter Oil Co., Tulsa; K. A. Covell, Pure Oil Co., Tulsa; C. A. Daniels, Phillips Petroleum Co., Amarillo, Tex.; J. D. Dyer, Continental Oil Co., Ponca City, Okla.; W. W. Fleming, Ohio Oil Co., Tulsa; H. A. Glover, Derby Oil Co., Wichita, Kans.; R. K. Huey, Deep Rock Oil Corp., Tulsa; T. C. Johnson, independent operator, Wichita, Kans.; Lewis List, El Dorado Refining Co., El Dorado, Kans.; Glenver McConnell, Shell Petroleum Corp., Tulsa; C. O. Rison, Indian Territory Illuminating Oil Co., Oklahoma City, Okla.; A. H. Proctor, Magnolia Petroleum Co., Ada, Okla.; J. K. Ellis, Transwestern Oil Co., Oklahoma City, Okla.; R. S. Knappen, Gulf Oil Corp., Tulsa; H. M. Stalcup, Skelly Oil Co., Tulsa; Max Mahaffey, Empire Oil & Gas Co., Pampa, Tex.; E. R. Filley, Texas Co., Tulsa; E. N. Wilson, Magnolia Petroleum Co., Ada, Okla.; W. G. Ricketts, Amerada Petroleum Corp., Tulsa; C. P. Dimit, Phillips Petroleum Co., Bartlesville, Okla.; J. H. Stewart, Atlantic Refining Co., Tulsa; G. A. Holloway, Lee C. Moore, Inc., Wichita, Kans.; L. G. E. Bignell, The Oil and Gas Journal, Tulsa; Lawrence Smith, National Petroleum News, Tulsa.

The nominating committee consisted of A. S. Ritchie, C. A. Daniels, J. S. Freeman, H. G. Amos, M. R. McLane.

During the meeting there were several sessions of the various committees and groups of officers. Plans for 1937 were discussed and it has been proposed that the state of Kansas be subdivided into three chapters to facilitate attendance at the meetings and shorten the distances necessary to drive from field to meetings. As now outlined, the west Kansas chapter will be located at Great Bend or Russell, the central chapter at Chase or McPherson and the eastern chapter at Wichita or El Dorado. It seems quite probable these plans will be consummated soon and it is believed this will give impetus to the interest in field meetings.

In Oklahoma the three chapters are located at Oklahoma City, Ada and Tulsa, and in the Panhandle the chapter is located at Pampa, although meetings are held at Amarillo when large gatherings are anticipated.

Vocational work is to be carried on in all chapters as already organized and during the early part of March a session of school will be held in Oklahoma City. This work is still considered of great importance to the Institute and has proven very profitable to the men attending the school sessions in the past.

The final tally of registrations showed that 702 men were in attendance and more than 400 of them came from out of Tulsa.

The next meeting of importance of A.P.I. Division of Production will be held in Dallas, Tex., April 1 and 2, when the Southeastern district will hold the annual spring meeting in the Baker Hotel. This meeting is expected to attract many oil men from the Mid-Continent section, as well as northern Texas, Louisiana and Arkansas. The committee is now busy preparing a good technical program and it is understood the Rodessa field will be discussed, as well as Talco and other relatively new fields in eastern Texas.

Left to right, top to bottom: J. M. LINEHAN, Mid-Continent Pet., and THEO. A. MORGAN, Kansas oil umpire; C. A. DANIELS, Phillips, and L. E. FITZGERALD, Phillips; C. H. KEPLINGER, Shell, and MAX MAHAFFEY, Empire; GEORGE S. BAYS, Stanolind, and H. M. McCLAIN, Magnolia

Three pictures below: G. A. HOLLOWAY, Lee C. Moore; CARL YOUNG, A.P.I.; VAN D. BENNETT, British American. ERNIE RICHARD, National Tank; S. H. MILEY, Skelly; J. C. CREEDEN, Skelly; A. W. WALKER and JOHN EVANS, Stanolind

SPARKS FROM THE NEWS

The season of uncertainty has arrived when the motorist takes a long drive one day and orders more furnace oil the next.

"A bird in the hand is worth two in the bush" is the attitude of those who favor continuance of the 1931 oil marketing code until substitute is agreed upon.

Some progress was made in offsetting higher crude costs during February when average retail prices of representative cities outside West Coast states advanced .36 cent per gallon.

The program of finding possible deep pays in Illinois gets its first tangible results with a commercial well in an old sand. The deeper sands are yet to be tested.

With a stable industry contributing more to the state's prosperity than ever before, the Texas legislature had sufficient vision to extend its oil conservation act two years.

The gasoline tax passes its eighteenth birthday and presumably points with pride to more than $6,000,000,000 taken from motorists during that period.

Louisiana's so-called "dictatorship" methods have some merit. When officials get ready to put over a conservation program there are few delays.

Michigan, which a few weeks ago could not produce its estimated demand, now exceeds it. A new field in Gladwin County assumes major importance.

Winter tourists who have been crowded out of the hotels by oil men know there is intensified activity in the Corpus Christi area.

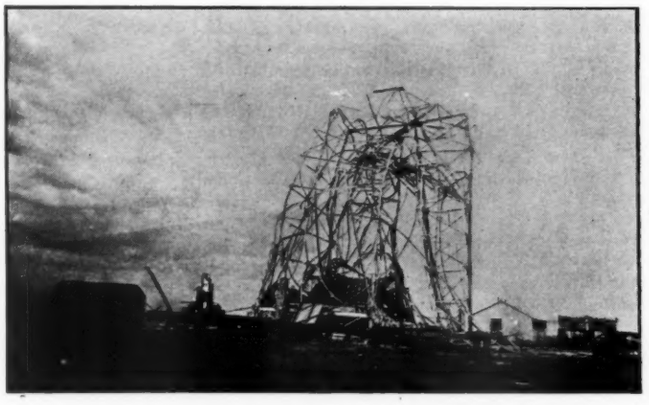
The wide search for new oil fields is also increasing natural gas reserves. What to do with many of them after they are found is becoming an important problem.

A tank-truck operating in East Texas is assumed to be guilty of something until it presents papers to show that it is not.

A combination gas liquefaction polymerization plant for the Texas side of the Rodessa pool to operate with casinghead gas may point the way to developments of far-reaching importance in future gasoline supplies.

A record of 90 locations was reported in West Texas last week. It is vast area and there is still room for more.

NOT AN AMUSEMENT PARK



What happens when drillpipe strikes an air pocket

As eastern visitor opines that a remote Texas area infested with coyotes and rattlesnakes is a proper setting for a wildcat test.

Action on March allowables may indicate return of the "self-sufficiency" antagonistic to interstate cooperation on which industry's return to prosperity has been based.

The 50 per cent increase in Kansas drilling this year means that the state shortly will reach an objective of 200,000 barrels daily in crude production.

Sweden Field in Duval County Opens Deeper Possibilities

By NEIL WILLIAMS

HOUSTON, Tex.—Producing from the Cockfield horizon at a total depth of 5,845 feet, Hiawatha Oil & Gas Co. (Benedum-Trees) No. 1 Southland, discovery well of the new Sweden field, 6 miles southeast of Benavides, Duval County, has been incentive for renewed interest in deep sand potentialities in that and adjoining counties of Southwest Texas.

Stratigraphically and in footage this is the deepest production ever found in Duval, or any adjoining county. Only two other tests, wildcats drilled by the company on the same block, have gone deeper. The sand, about 200 feet below top of the Cockfield, corresponds, it is believed, with the Conroe sand. Other production in the county, in such fields as Government Wells and Loma Novia, has been from the Jackson or younger horizons.

Owners estimate the well potentially good for 7,000 bbls. daily. It was flowed at the rate of 184 to 187 bbls. through a 5/32-inch choke on the 2-inch tubing with the casing closed, making up some back allowable. The allowable is 125 bbls., but previously, the operators not knowing what the allowable would be, held the flow to between 75 and 100 bbls. daily. Up to February 22, 2,300 bbls. had been run.

INTERESTING PRESSURES

Particularly interesting are the pressures. Working pressure on the tubing, with production through the 5/32-inch choke, holds steady around 895 pounds. Casing pressure, closed in, holds 1,800 pounds. These pressures exist despite the fact practically no gas is being produced. There has been no occasion to set up separators, and the oil is being run direct to tankage.

The high pressures indicate a high hydrostatic head, or else the field may have a high pressure gas cap with the location of the well downdip from the gas cap area. Nineteen feet of sand, all oil saturated, was cored and drilled with the bottom of the hole still in sand. No indication of water has been given, and of special significance is the low temperature of the oil, around 60 degrees.

An electrical coring survey made when the sand was encountered gave no indication of water in the sand. A drill stem test was made and 660 feet of pipe line oil was recovered. On these tests, operators believe whatever water there may be is well away from this well.

COMPLETION OF WELL

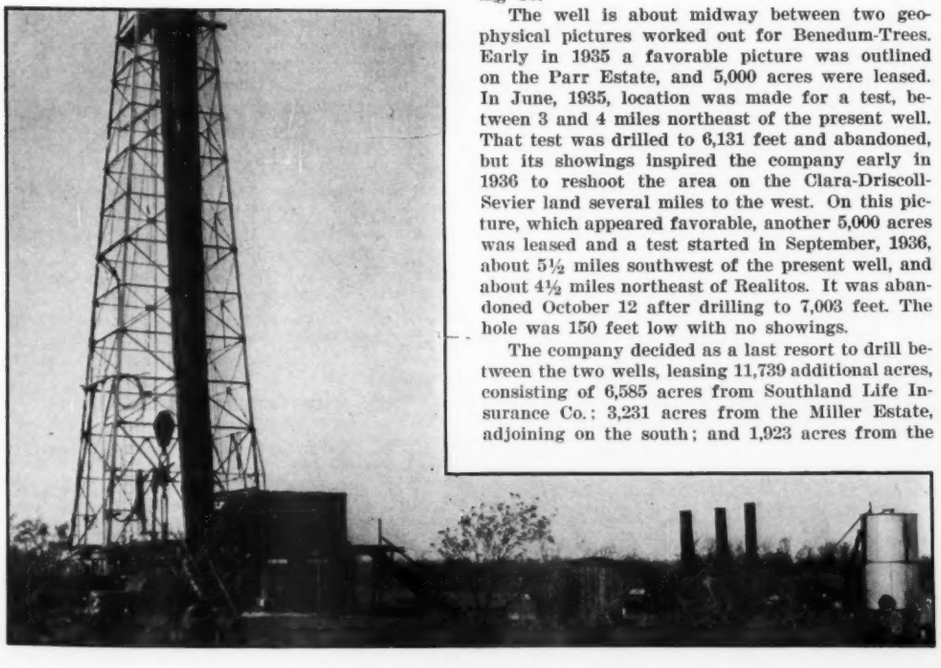
The well was completed by gun perforation method. A full string of 7-inch casing was run to bottom at 5,845 feet, and cemented. The cement was drilled out to 4 feet of bottom. The gun perforator was run and the casing perforated with 16 shots in the upper 10 feet of the sand. Then a joint of 5-inch screen with packer was run in on drill pipe and sealed off, and after coming out with the drill pipe, the 2-inch tubing was run in and hung 100 feet off bottom.

Washed down the well failed to flow, and an attempt was made to jet it with air, also unsuccessful. After swabbing the well started flowing and cleaning itself through a one-quarter inch choke. Pressure began building up steadily.

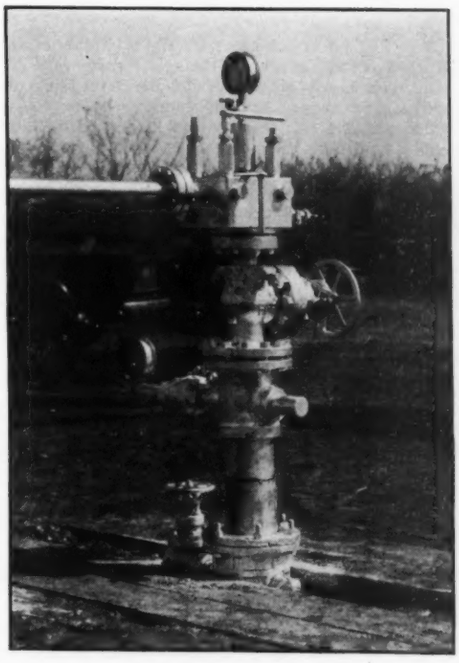
The oil is 42.5 gravity and light green, and has a gasoline yield on straight distillation of 60 per cent. A 2-inch line has been laid to Norway, 4 miles distant, whence it is moved over railroad by Republic Pipe Line Co., Benedum-Trees subsidiary, to tidewater at Corpus Christi, and by boat to the Texas City refinery of Republic Oil Refining Co.

The well is about midway between two geophysical pictures worked out for Benedum-Trees. Early in 1935 a favorable picture was outlined on the Parr Estate, and 5,000 acres were leased. In June, 1935, location was made for a test, between 3 and 4 miles northeast of the present well. That test was drilled to 6,131 feet and abandoned, but its showings inspired the company early in 1936 to reshoot the area on the Clara-Driscoll-Sevier land several miles to the west. On this picture, which appeared favorable, another 5,000 acres was leased and a test started in September, 1936, about 5½ miles southwest of the present well, and about 4½ miles northeast of Realitos. It was abandoned October 12 after drilling to 7,003 feet. The hole was 150 feet low with no showings.

The company decided as a last resort to drill between the two wells, leasing 11,739 additional acres, consisting of 6,585 acres from Southland Life Insurance Co.; 3,231 acres from the Miller Estate, adjoining on the south; and 1,923 acres from the Herberger Estate, which adjoins the Southland lease on the east. This made a total of 21,739 acres leased by the company, all in a solid block with the Parr block on the east and the Clara-Driscoll-Sevier block on the west.



Discovery rig drilling south offset



Discovery well

Location for the discovery well was made in the southeast corner of the Southland lease, in section 15, Aqua Poquila Survey, 330 feet from the south and east lines. Contract was let to the Longhorn Drilling Co. of Three Rivers, Tex., which had drilled the other tests. This company is owned by Henderson and James O. Coquat, brothers, with the latter being directly in charge of drilling the well and F. J. Herbert on the job as superintendent for Hiawatha Oil & Gas Co. The contract called for 5,500 feet and drilling started December 15.

EASY DRILLING

The contract depth of 5,500 feet was reached without showings but drilling was continued, resulting in picking up the Cockfield sand. Except for a very thin section of the Pettus sand, about 60 feet below the top of the Yequa, no other sands were encountered. Formations consisted largely of shales and gumbos. The entire Frio section was missing. With the exception of one section of hard formation, all digging was easy.

Approximately 960 feet of cores were taken, from 4,000 feet to bottom, a total of 96 cores averaging 10 feet. A wire line core barrel was used.

The water wells are jetted with air supplied by portable, gasoline engine driven compressors. Absence of gas is a handicap, as fuel has to be hauled by truck from a small refinery at Bruni, more than 50 miles.

With the discovery well only 330 feet out of the southeast corner of the Southland lease, two direct offsets have been necessitated, one 660 feet south of the well on the Miller lease, and the other 660 feet east of the discovery on the Herberger lease.

(Continued on Page 18)

Many Pools Responsible for Increased Crude

By JAMES McINTYRE

In one year the oil fields of the United States increased their production 516,308 bbls. per day to meet the steadily increasing demand for crude. In this increase Texas leads with 259,321 bbls.; Oklahoma is second with 85,025 bbls.; Louisiana third, 46,852 bbls.; Kansas fourth with 44,650 bbls. and New Mexico fifth with 38,855 bbls. Only two states carried in the accompanying table (No. 1) show a decline, these being Michigan and Arkansas.

None of the states in which increases are shown is producing to capacity, but one question naturally arises as to how much more oil the country can produce daily without upsetting the balance fields like East Texas, Oklahoma City, Rodessa, Fitts and Kettleman Hills must maintain to prevent economic waste by the reduction of reservoir energy or the intrusion of salt water, or both. The second question presents itself as to what will be the limits of refinery needs, and the third, where will the additional production come from?

All last year the producing end of the industry was called upon to step up output, but the response was not sufficient to supply the demand, and crude stocks were drawn upon steadily until they had fallen early this year to a point where some of the largest oil companies found themselves with little more than working stocks.

The largest increase last year over the production of 1935 came from Rodessa, in North Louisiana and eastern Texas, which yielded 20,740,245 bbls. in excess of its 1935 output. This field is producing more than twice as much today as it was a year ago, or 87,520 bbls. per day as against 40,325 bbls. The Fitts pool in Oklahoma increased 13,007,626 bbls. last year, and today is producing 90,175 bbls. per day as against 42,350 bbls. a year ago. Rodessa and Fitts supplied the largest production increases last year, and now show the largest production increase over the same period last year. One hundred and two fields listed on the page (Table 2) as having increased their production last year over their 1935 output accounted for a total increase of 137,405,761 bbls. Aside from Rodessa and Fitts the greatest increase shown by any of these fields was 4,880,715 bbls. by the Eunice pool in Lea County, New Mexico.

Comparing the production on a recent date with production a year previously, the following more prominent fields in Texas showed increases:

INCREASES IN TEXAS

In the Texas Panhandle: Carson County, 1,550 bbls.; Gray County, 9,000 bbls.; Hutchinson County, 7,350 bbls.

In North Texas: Jack County, 3,200 bbls:; Montague-Cooke counties, 5,250 bbls.; North Young County, 1,550 bbls.; Eastland area, 1,550 bbls.

Eastern Texas: Talco, 16,600 bbls.; Cayuga, 3,000 bbls.; Rodessa in Cass County, 38,320 bbls.

Gulf Coast area: Saxet, 19,300 bbls.; Plymouth, 6,350 bbls.; Placedo, 5,050 bbls.; Saxet Heights, 8,900 bbls.; Tomoconnor, 6,650 bbls.; Refugio County, 1,700 bbls.; Anahuac, 7,000 bbls.; Conroe, 1,000 bbls.; Dickinson, 1,450 bbls.; Hastings, 6,400 bbls.; Manvel, 3,500 bbls.; Raccoon Bend, 1,450 bbls.; South Houston, 5,500 bbls.; Tomball, 1,850 bbls.

TABLE 1—COMPARATIVE DAILY PRODUCTION BY PRODUCING DIVISIONS

	Week ending Feb. 22 1936	Week ending Feb. 20 1937	Difference
Oklahoma City	150,625	147,900	— 2,725
Seminole-St. Louis	92,775	89,675	— 3,100
Remainder of State	280,400	371,250	+ 90,850
Total Oklahoma	523,800	608,825	+ 85,025
East Texas	435,698	453,487	+ 17,789
West Texas	160,953	190,485	+ 29,532
North Central Texas	81,347	99,533	+ 18,186
Texas Panhandle	62,753	72,497	+ 9,744
East Central Texas	49,347	109,507	+ 60,160
Gulf Coast Texas	216,848	303,397	+ 86,549
Southwest Texas	70,203	107,564	+ 37,361
Total Texas	1,077,149	1,336,470	+259,321
North Louisiana	60,880	70,400	+ 9,520
Gulf Coast Louisiana	133,200	170,532	+ 37,332
Total Louisiana	194,080	240,932	+ 46,852
Santa Fe Springs	43,750	43,700	— 50
Long Beach	70,150	61,250	— 8,900
Kettleman Hills	75,150	79,000	+ 3,850
Remainder of State	383,200	402,800	+ 19,600
Total California	572,250	586,750	+ 14,500
Kansas	141,600	186,250	+ 44,650
Arkansas	29,455	27,370	— 2,085
Eastern fields	102,100	115,100	+ 13,000
Michigan	35,889	29,884	— 6,005
S.E. New Mexico	56,060	94,915	+ 38,855
Rocky Mountain area	49,840	72,035	+ 22,195
Total U. S.	2,782,223	3,298,531	+516,308

Southwest Texas: Seven Sisters, 8,050 bbls.; Loma Novia, 9,500 bbls.

West Texas: Crane-Upton, 8,000 bbls.; Ector County, 8,150 bbls.; Iatan-East Howard, 2,800 bbls.; Ward County, 12,000 bbls.; Winkler County, 15,750 bbls.

OKLAHOMA AND KANSAS

In Oklahoma the following fields showed considerable increases in production per day over the same period in 1936: Fitts, 47,825 bbls.; Edmond, 9,900 bbls.; Oklahoma City, 6,100 bbls.; Bowlegs, 2,550 bbls.; South Burbank, 3,500 bbls.; Crescent, 6,200 bbls.; Graham, 1,800 bbls.; Jesse, 2,900 bbls.; Keokuk, 3,050 bbls.; Lucien, 2,500 bbls. A lot of scattered pools showed a combined increase of 9,000 bbls.

The largest increase in Kansas was in Rice County. The Silica pool alone showed a gain of 11,950 bbls. per day and the county a gain of 23,554 bbls. per day; the Wellington pool in Sumner County, 1,587 bbls., Barton County, 6,696

(Continued on Page 18)

TABLE 2—PRODUCTION INCREASE IN 1936 OVER 1935 OF PROMINENT FIELDS IN UNITED STATES

TEXAS

	1936 production	Increase over 1935
East Central Texas—		
Rodessa (Cass County)	3,052,436	3,052,436
Talco	1,453,696	1,453,696
Cayuga	2,138,193	837,193
		5,343,325
North Texas—		
Wichita County	5,543,973	200,069
Wilbarger County	3,161,754	203,935
Young County	4,006,420	372,093
Baylor County	1,238,638	712,645
Cooke County	1,641,057	888,264
		2,377,006
Texas Panhandle—		
Carson County	1,944,455	110,518
Hutchinson County	5,589,421	852,115
		962,633
Central Texas—		
Shackelford County	2,457,758	613,058
		613,058
West Texas—		
Church-Fields-McElroy	4,448,061	358,329
Cowden	2,188,885	990,460
Mitchell County	2,592,169	1,161,709
Upton County	3,346,785	1,223,714
Grand Falls	4,935,566	1,190,207
O'Brien	3,332,552	1,178,813
North Winkler	2,953,337	1,420,844
Penn	2,236,956	197,527
		7,721,604
Southwest Texas—		
Luling	2,070,765	52,736
Cole	2,107,070	428,857
Loma Novia	4,620,409	3,930,648
Lopez	1,343,186	1,242,329
Samfordyce	1,829,606	578,445
Seven Sisters	1,956,777	1,822,067
		8,055,282
Gulf Coast Texas—		
Anahuac	2,662,187	2,322,488
Hastings	2,409,977	1,789,056
Humble	1,257,942	19,795
Livingston	1,089,870	88,211
Manvel	2,971,512	666,883
Mykawa	1,185,447	473,505
Pierce Junction	1,323,137	130,916
Raccoon Bend	1,948,661	254,034
South Houston	1,124,666	1,055,895
Tomball	2,608,415	705,378
Dirks	1,736,282	1,149,891
Greta	5,583,816	875,036
Plymouth	3,330,122	2,799,787
Placedo	1,332,507	1,332,507
Refugio	1,822,193	284,430
Saxet	4,585,637	3,423,415
Saxet Heights	2,227,222	2,227,222
Tomoconnor	1,324,537	1,324,537
		20,922,986

KANSAS

	1936 production	Increase over 1935
Barton County	1,194,613	441,332
Harvey County	1,592,304	66,445
Rice County	11,427,073	3,358,051
Russell County	7,073,226	2,927,140
Ellis County	758,152	591,328
Sumner County	3,230,779	1,154,056
Cowley County	1,804,114	258,160
		8,796,522

OKLAHOMA

	1936 production	Increase over 1935
Nowata	3,178,530	764,531
South Burbank	5,390,399	1,173,929
Olympic	2,710,620	2,503,923
Seminole-St. Louis	34,722,600	99,713
Allen district	3,076,287	179,542
Fitts	19,908,495	13,007,626
Keokuk	1,384,013	51,841
Edmond	4,370,495	2,892,186
Lucien	4,542,441	798,426
Crescent	2,300,992	298,456
Healdton	3,435,656	38,246
Graham-Fox-Wildcat Jim	1,640,941	173,531
		21,981,950

CALIFORNIA

	1936 production	Increase over 1935
Belridge	4,648,261	1,018,894
Edison	2,023,451	1,044,182
Fruitvale	2,902,620	1,055,092
Kern River	5,136,850	618,741
Kettleman Hills	29,295,959	1,689,142
Midway-Sunset	21,481,621	1,241,823
Mountain View	9,712,658	483,767
Mount Poso	6,747,210	1,207,322
Round Mountain	3,955,379	1,628,528
Elwood	4,478,732	80,856
Santa Maria	1,668,734	524,646
Ventura Avenue	12,609,878	1,630,428
Ventura-Newhall	1,699,905	227,434
Dominguez	9,712,179	1,796,329
Inglewood	4,546,727	69,723
Montebello	3,204,714	917,329
Santa Fe Springs	16,460,142	301,437
Seal Beach	3,461,067	80,541
Torrance	2,859,892	361,449
		15,977,663

LOUISIANA

	1936 production	Increase over 1935
North Louisiana—		
Rodessa	19,013,925	17,687,809
Coastal Louisiana—		
Black Bayou	1,104,024	536,159
Caillou Island	5,232,961	2,360,546
Cameron Meadows	1,882,478	836,012
Gillis	5,653,087	3,480,736
Hackberry (East)	2,973,180	548,912
LaFitte	2,386,062	1,839,981
New Iberia	2,172,369	1,639,863
Roanoke	2,319,360	720,736
Sulphur	1,763,135	826,483
Tepetate	1,464,294	1,334,167
		31,811,406

ROCKY MOUNTAIN FIELDS

	1936 production	Increase over 1935
Eunice, New Mexico	8,140,077	4,880,715
Cooper, New Mexico	2,898,284	393,833
Monument	3,576,317	3,345,185
Lance Creek, Wyoming	1,813,991	1,103,825
Cut Bank, Montana	3,283,437	1,073,243
Kevin-Sunburst, Montana	1,525,593	225,865
Iles, Colorado	1,164,530	98,412
		11,121,078

EASTERN FIELDS

	1936 production	Increase over 1935
Allegany, New York	3,302,650	100,700
Bradford, Pa.-N. Y.	14,553,350	1,372,300
Kane to Butler	2,939,200	248,250
		1,721,250

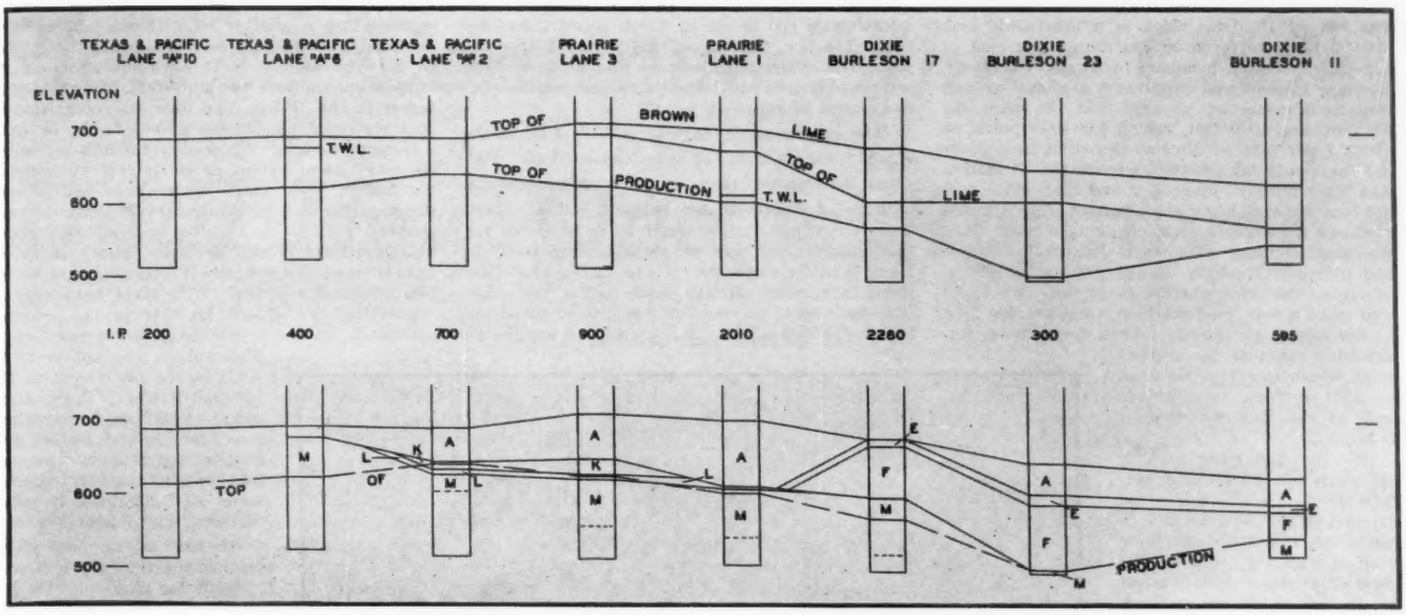


Fig. 1—Relative position of lime horizons in a portion of the McCamey pool, Upton County, Texas

Studying Present Earth Surface Reveals Past Geologic History

By W. V. HOWARD
Geologist, Wright Building, Tulsa

In order to understand the formation of reservoirs below unconformities, let us consider a land surface. On this surface we have a mantle rock consisting of soil which grades downwards into fresher rock and finally into bed rock. Much of this material is gathered into the river valleys and sorted, the finer silts being carried down to the sea. Bed rock may lie at the surface or may be buried tens of feet below the surface.

At varying depths below the surface, but conforming roughly to it is the ground water level. Above this level the rocks are weathered, but below it they tend to be cemented. The water level is not constant however. During periods of aridity it may be very deep and the weathered zone will be correspondingly deep. In humid periods it will be high. A period of aridity lasting over thousands of years will weather the rocks deeply, while a later period of humidity will cause them to be made more impervious, particularly just below the water table. Thus there may be a tight "caprock" above a weathered porous zone due to climatic change.

The way in which rocks weather depends on their composition and texture. Massive rocks, such as most igneous rocks, pure limestones and tightly cemented sandstones do not weather deeply unless they are fractured. In such cases the weathering widens the fractures or joints and, in the case of limestone, may develop large caverns.

Shales break down readily into muds and silts but impure limestones and sandstones with a lime cement are made porous by the removal of calcite. During the course of centuries of weathering these porous rocks tend to break down and form low-lying areas, while the massive ones form the hills. However, some of the porous rocks are resistant enough to stand up above the general level of the low-lying plains which make up most of the land surface.

From a study of present coasts, we can visualize what would happen as the sea advances over a land surface. On low coasts where the zone of weathering is not deep, the sea sorts out the surface deposits, removing the silt and reworking the sands. The advance of the sea does not greatly modify the land surface unless it is rugged because the erosive action of the sea is inhibited by the great quantity of sediment that lies on the sea floor and makes the water shallow. When the sea strikes a rocky shore it batters at it incessantly. One could thus imagine the submergence of Florida without any great amount of marine erosion but one could not imagine the submergence of Maine or the Coast Ranges of California without the removal of much of the surface. Thus the massive rocks which do not lend themselves to the development of porosity are battered to pieces and the fragments used in the making of new deposits. The flat-lying softer materials which tend to be porous are covered by the sea without profound modification. They thus form potential reservoirs.

CONTINUITY OF FORMATIONS

One of the amazing features of geology is the wide-spread uniform nature of certain deposits. Of these three will be discussed, the Hunton lime, the Wilcox sand and the Woodbine sand and their correlatives.

The extent of the Hunton lime is much greater than the use of "Hunton" implies. In Oklahoma it ranges from Lower Silurian to Middle Devonian in age. There are unconformities at the top and also within the formation. Limestones corresponding to the Hunton extend into West Texas and eastern Kentucky. The time represented by the Hunton is of the order of 60,000,000 years. If it be assumed that limestone is deposited at the rate

THIRD OF SERIES

In this series of articles, the first of which was published in the issue of February 4 and the second on February 11, an outline has been presented of the types of oil field which will be of increasing importance in the future. These fields are located mainly along the shore lines of advancing seas and below unconformities. Much of the hazard can be removed from the search by a systematic study of known pays and the preparation of maps showing the projection of these pays into undrilled areas.

In the fourth and final article, the distribution of such fields as are now known and the possibility of extending the productive areas in the various oil-producing districts will be outlined.

of 1 foot in 1,000 years, the present thickness of 400 feet of Hunton, which is a maximum, took 400,000 years to form, or less than 1 per cent of the time. As the members in Texas, Oklahoma, Kansas, Illinois and Kentucky are not exactly contemporaneous let us say that the total deposition was 4,000 feet, taking 4,000,000 years, or about 7 per cent of Silurian-Devonian time. During the remaining 56,000,000 years the formation was being removed by erosion and that which was not removed was being made porous. The Hunton produces in Kansas, Seminole, Pottawatomie and Pontotoc counties, Oklahoma, Kentucky, Illinois and Indiana. We have enough wells to enable us to outline the areas where it is present. We could also make a very good start on a topographic map on the top of the Hunton. This would be of considerable value as the Misener sand, which is a residual sand on this surface, produces as well as the Hunton where it is high.

We can also make geological maps of the Hunton surface showing what rocks were exposed on that surface and by combining this with our topographic map we could outline those areas where certain members are located in which porosity should best develop. In this way we could systematically trace other areas of possible Hunton production.

In the same way, we can take each surface represented by unconformities within the Hunton and trace them out. As later unconformities cut below the older ones in many places, these maps would be fragmentary. In many places they would serve no useful purpose but in some places the lowest member of the Hunton produces and here the unconformity immediately above it should be mapped. For Hunton, we could substitute Arbuckle-Ellenberger-Siliceous lime, Permian Big lime, Madison, Chat, Asmari, Tamasopo or Dundee. The method of attack in all cases would be the same.

In studying these limestones, petrography is of relatively little value. The microscope is an extremely valuable aid but microscopic work is limited by the personal factor. The petrographer who can correlate a detailed log made today with one made two years ago without reexamination of the old cuttings or cores is very rare. Few petrographers would consider using another's log for detailed work. A mechanical method which can be standardized is needed for this work. The writer has found that his modification of Trager's method of mineralogical analysis by centrifuging gives good results, although much better methods will be needed for accurate work.

Fig. I shows a cross-section through a part of the McCamey field in Upton County, Texas. The upper section shows the elevations of the lime tops and of the top of the pay, according to scout reports checked by microscopic examination of cuttings. The lack of correlation between these tops and initial production is obvious. In the lower cross-section, the section below the reported lime top is divided into three zones on the basis of a mineralogical analysis of the cuttings. That part of the section labelled "A" is in reality a part of the anhydrite series overlying the lime and should not be considered a part of the lime series. Beds "E" and "F" are a part of the detrital lime series which is frequently found between the lime top and the producing lime series. The main lime series lies below these beds and in this section consists of three beds, "K," "L" and "M." Bed "K" is an impure dolomitic limestone, "L" is a calcareous shale and "M" an impure calcitic limestone. This bed is one in which porosity was developed below the unconformity and forms the pay. The relationship between production and the interval between the top of this bed and the unconformity is apparent.

The chief obstacle to work of this kind is the almost criminal waste of cores and cuttings. Had these been saved, they would have been worth millions of dollars to the industry today. Many universities have tried to act as depositories for this material, but they cannot afford the staff to make it easily available. A few thousand dollars spent in erecting storage space and a few more thousands spent on research would have saved the industry a few million in reducing the number of dry holes and in directing wildcatting more intelligently.

Fig. 2—Map showing distribution of Trenton lime pools in northeastern Ohio. Structure contours on top of the Trenton limestone

WILCOX SAND

Unlike the Hunton, the Wilcox sand is not wide-spread. But there are similar sands of somewhat the same age from Ohio to New Mexico and from Minnesota to the Rio Grande.

In the north we have a pretty fair idea of the way in which this sand was deposited. The St. Peter sand is reworked Cambrian material which is reworked pre-Cambrian. The sea in which the St. Peter was deposited retreated slowly to the south and, as a result these sands get gradually younger. The Wilcox is younger than the St. Peter, but is it reworked St. Peter?

Just because the Wilcox is so productive in Oklahoma is no reason why the St. Peter should yield oil in Illinois. The Cambrian sands of Minnesota, Wisconsin and Ohio are also very similar and do not yield oil.

We can be optimistic and wildcat or we can be pessimistic and keep out of Illinois, but the wiser move would seem to be to study the Wilcox and the St. Peter and try to find out something about them. With all of the Wilcox oil from Oklahoma City and Seminole how much do we actually know about the Wilcox sand? Is it even the same in both places? Is the Wilcox of Garber and Billings also the same? Is the Wilcox actually a blanket sand or is it a number of sands representing a number of different shore lines?

Enough wells have been drilled to the Wilcox to give us a great deal of information on the subject but we have not studied it. Our whole interest in the Wilcox has been its recognition so that we could set pipe in proven fields, or make a test in wildcats. Whether or not it is lenticular, its exact areal extent or its lateral variation is not known. We know where it is not present, but that is all. In Seminole and Pottawattomie counties we have many pools and no easily recognizable trend; from Cleveland County north we have a trend along which Wilcox pools are strung like beads on a string. With more knowledge of the Wilcox we should be able to tell whether conditions in these two adjoining areas are as different as they appear to be. As it is, we now recognize Upper and Lower Wilcox, Simpson above Wilcox, Lower Simpson, Bromide and McLish production. And every time we find another similar pay we start off by calling it either "detrital" or "Wilcox."

If there is any place where detailed stratigraphy is needed it is in the Simpson. Over a billion barrels has been or will be produced from known fields in this formation. There is no reason why we should not find another billion barrels in it. But 4,000 to 8,000-foot wildcats are expensive. A hundred thousand dollars spent in research on this formation, even on the 5 or 10 per cent of the material that has been thrown away would probably save many such wildcats. It might even locate two new hundred-million-barrel fields. Individual geologists have made valuable contributions to our knowledge of the Simpson but much more is needed. If several men were able to spend their full time on a study of the Simpson over a period of years, their findings would be of very great commercial value.

For Wilcox, we could substitute in this discussion Temblor, Vaqueros, Sespe, Bartlesville, Frio or a dozen other sands.

The Woodbine sand appears to be a blanket sand and is known to be productive along both flanks of the East Texas Basin and in structures within the basin. It is often correlated with the Dakota. In this discussion it is important in that it is an example of a sand which is not productive only near known shores. The Mexia fault line pools and Van contain oil some distance from the old shore. Even East Texas was not on the original shore, but represents a place where the sea retreated and some of the Woodbine was removed forming a wedge edge when the sea readvanced to deposit the Eagle Ford.

Hence, it would appear that this sand may be productive on structure anywhere within the basin. Is this correct or have we simply decided to call the sand above the Trinity "Woodbine" and assume it to be the same throughout? The Woodbine in East Texas is far from being a uniform blanket sand which would make it possible that there are as many Woodbines as there are Wilcoxes.

If so, the sand in the middle of the basin is older than that on the margins and oil could be found near the edge of these smaller basins whose outlines would be parallel to the edge of the large one. Have we enough geology to find these edges or even to determine whether or not they exist? Probably not, but if we save the materials that are available we shall have it in the near future.

(Continued on Page 22)

Plea to Continue Ethics Code Until New One Is Approved

By HENRY D. RALPH

WASHINGTON, D. C., Mar. 1.—Unanimous support for retaining the 1931 trade practice rules for the petroleum industry until the pending new code is put into effect was expressed before the Federal Trade Commission at hearings February 24 and 25.

The commission had called the hearings to permit the industry to comment on its proposal to rescind the 1931 rules prior to acting on the new code, but there was no support for this proposal, and Chairman W. A. Ayers declined to state who suggested why this should be done.

The 1931 trade practice rules were forgotten during the NRA but later were revived, particularly on the Pacific Coast. More recently a new code, designed especially for application east of the Rockies, was worked out by a committee consisting of C. E. Arnott, vice president of Socony-Vacuum, for refiners; Paul E. Hadlick, secretary of National Oil Marketers Association, for jobbers; and Wilmer Schuh, president of National Association of Petroleum Retailers, for the retail group. This code is before the FTC for approval.

The Pacific Coast contingent at the hearing was particularly vigorous in asking that the old trade practice agreement be continued, the spokesman being Donald R. Richberg, former chief counsel and acting administrator of NRA, who appeared as counsel for Standard Oil Co. of California.

The only suggestion of opposition came from New Jersey Retailers, who objected that neither the 1931 rules nor the proposed code goes far enough in protecting retailers, but Commissioner Ayers declared these practices are purely intrastate commerce and could not be covered by anything the FTC might do.

"The desire to continue the present code is not a desire to have that code take preference over any other code," Mr. Richberg told the commission. "Our fundamental position is that primarily the present conditions under which the industry is operating should not be disturbed and the present code set aside while merely considering the adoption of a new code."

ARNOTT APPROVES

Fayette B. Dow, counsel for the National Petroleum Association, presented a letter from the American Petroleum Institute dated January 30, 1937, favoring retention of the present code until a new code is adopted. Mr. Dow also introduced a letter from C. E. Arnott requesting the code be continued until the new code is adopted. "If the code were to be withdrawn now," the letter read, "it would throw the Pacific Coast practices into confusion.

Mr. Richberg, as well as representing Standard of California, also represented a Pacific Coast group consisting of A. H. DeFriest, vice president, General Petroleum Corp.; B. A. Rowell, director, Gilmore Oil Co.; R. W. Walsh, vice president, Richfield Oil Co.; J. F. Bushnell, president, Seaside Oil Co.; W. P. Durkee, vice president, Shell Oil Co.; C. LaV. Larzelere, assistant secretary, Signal Oil Co.; R. K. Davies, vice president, Standard Oil Co.; R. T. Herndon, vice president, Texas Co.; P. E. Allen, sales manager, Tide Water Associated Oil Co.; V. H. Kelly, director sales, Union Oil Co. of California; Lawrence van der Leck, chairman, Central Committee of California Oil Producers, vice president, Oil Producers Agency of California, vice president, Fullerton Oil Co.; R. M. Blodget, vice president, Oil Producers Agency of California; W. H. Morgan, president, Independent Refiners Association of California, Inc., vice president, R. R. Bush Oil Co.; Fred Brewer and Robert Thomas, vice presidents, National Association of Petroleum Retailers, Inc.; Earl L. Miller, secretary, Regional Code Compliance Committee.

J. Howard Marshall, representing the Pacific Coast contingent, also made a plea for retention of the code. He based his discussion on the rules of the code governing price posting, and the abolition of secret dealings, misrepresentations, and sales made on suspicion rather than fact.

"If dealings are brought into the open, as they are by this code, it is easier to have the factors of supply and demand govern the price structure, thus abolishing guess work and moving price-levels on a suspicion basis," Mr. Marshall testified.

According to Mr. Marshall, 95 per cent of the Pacific Coast companies have complied with the price posting procedure to which he attributed the general stabilization of the industry's price structure in California in the past 15 months.

Lawrence van der Leck, chairman of the Central Committee of California Oil Producers, urged the code be kept, as did R. M. Blodget and W. H. Morgan.

Myron M. Walleck, attorney for the Tri-County Retail Dealers Association, (N. J.), appeared in opposition to both codes.

"There is nothing in the present code that helps the retailers of gasoline," said Mr. Walleck. "The major oil companies sell directly to commercial (factory) accounts, who sell to their employes at a price so far below what an independent dealer could sell that the independent is forced out. The employes buy at one-half cent less than gasoline is sold to independent dealers."

CHAMPIONS CODE—*Donald R. Richberg, former NRA administrator, represents Pacific Coast oil men at FTC hearing.—(Underwood & Underwood)*

Mr. Walleck alleged one or two stations on a large highway would cut the price and a price war would result along the whole highway.

"I am quite sure," Commissioner Ayers interrupted, "that as long as it is intrastate the Federal Trade Commission couldn't do anything about it."

Elam Ausbrook, Jersey retailer, said: "This present code doesn't help us a bit. The new code, Mr. Arnott's code, won't help us either."

Russell B. Brown, Independent Petroleum Association, supported the 1931 code, saying, "We producers look with fear toward any change that might disrupt the marketing set-up and so disturb the price of crude if the commission rescinds its approval of the present code."

Fred Brewer, National Association of Petroleum Retailers, gave the support of that organization to the 1931 code. "We want a code to provide a common ground where we can fraternize with competitors so we can intelligently regulate our end without hurting them," Mr. Brewer said.

Barney Majewski, Deep Rock Oil Co., argued that the code be continued.

NEW CODE WELCOMED

"When you adopt that new code there'll be 250,000 signatories instead of the 15,000 that signed the 1931 code," Mr. Majewski predicted. "I'll guarantee 95,000 signatories myself. You know why there were only 15,000 signatories to the 1931 code? I'll tell you why. That code was sponsored by the American Petroleum Institute, the little fellows weren't in on it. They were scared of it. I didn't sign it until it had been in operation for quite a while. The code you have before you now was formed and mulled over by the little men in the industry as well as the big.

"But gosh, don't take away the old 1931 code until we get the other one. We need some protection.

"Does the open posted price help the public? Sure it does. You can't give away a secret rebate when you've got a posted price. At least, it's darn difficult."

Discussing the Robinson-Patman law, Mr. Majewski said, "I wish somebody would tell me what the Robinson-Patman law means. I even asked the author what it meant. You know what he said? He said, 'Go see the Federal Trade Commission'."

Commissioner Ayers remarked that the commission would find out what it meant if it could get somebody "to stay put."

Felix Smith, Standard Oil Co. of California, said, "I earnestly entreat you that what is probably the greatest single piece of work done by the commission be not destroyed without some explanation."

Commissioner Garland Ferguson asked several questions as to specific rules. "Don't these rules tend to lessen competition by cutting down competitive methods by agreement?"

Mr. Majewski interrupted. "I may be out of order but these practices are unfair methods of competition. Furthermore, those rules you quote, Mr. Commissioner, are not binding on a signatory. They are merely indicative of how the industry feels about certain trade practices."

Oil Scout Has Fewer More Responsibility

R. L. White, Sun Oil Co. scout, getting samples of formations from a well in Hidalgo County, Texas.—(Courtesy Our Sun)

Scouting has become a different thing. Less of adventure and detective work and thrill. More systematic, more precise and contributing vastly more to the fund of solid information upon which the oil company of 1937 builds its plans. The coming time is likely to witness further changes as the scout, once a colorfully audacious figure in the oil business, adjusts himself to the new tasks and responsibilities which have fallen upon his vocation. His job is by way of becoming a profession.

Significant of the new place which the oil scout is assuming in the industry is the setup adopted by the Carter Oil Co. The scout division ordinarily is a part of the land department, though some companies assign it to the geological department. The Carter has established an exploration department, comprising five divisions: Land, leasing, scouting, geological and geophysical. Each division has its own chief, who is subject to the head of the exploration department, and each division chief has the same standing as any other.

The Carter's scouts were formerly under the direction of the land department head. The new setup is looked upon as correlating exploratory activities more satisfactorily.

Virtually all the facts and statistics which determine the course of an oil company in its leasing and development work are obtained today by the scout.

Specialization has emerged from requirements which modern exploratory methods impose upon the scouting department. Even though a scout has acquired a fair understanding of bottom-hole pressure, stratigraphic traps, anticlines and volcanic necks, it not unfrequently happens that an oil company wishes to have a drilling well watched by a trained geologist. So there has appeared the geological scout; that is, a scout who is also a geologist.

There is also the seismograph scout. "Seis scout," they call him. Almost every major oil company has at least one, and his job is to follow seismograph crews. Members of such a crew may be friendly and give him information. They are just as likely to refuse it. In either case a scout's familiarity with the territory being worked is invaluable. All the scout can do in many cases is to keep a record of the spots where shots are made.

AND THE CORE-DRILL SCOUT

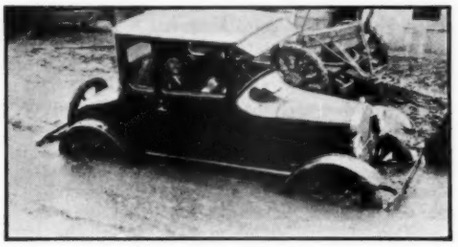
Then there is the core-drill scout, who must be able to determine the depth of coring operations by watching the number of drill-joints pulled from the hole. Like the seismograph scout he may be able to get helpful information from the crew if he has a genial personality and a fair endowment of tact. Some large oil purchasing companies employ pipe-line scouts, whose duty it is to report the quantity of crude run by each line in the field and the disposition of the oil; that is, whether it goes to storage, to tankcars or to some pipe line for transportation to a refinery.

In these later days of tight crude supplies scout duties sometimes include solicitation of connections. Some companies have authorized scouts to buy leases, putting the necessary checking account at their command.

Commenting on the variegated experiences that enter into a scout's life, especially in Texas, John H. Langston, chief scout of the Sun Oil Co., says in that company's periodical, "Our Sun":

"Scouts in East Texas and the Gulf Coast are generally extremely active (and for a good reason) during the summer nights when they have to remain around a test to watch its drilling, and when they are gathering samples of an important formation being drilled. They can tell tall stories about their experiences with mosquitos in those areas during watchful nights of waiting, and have ample proof in large welts raised by the long-billed insects. Scouts in West Texas and the Panhandle districts are generally not bothered by such attacks from the air, but many of them can tell chilling stories of near contacts with diamond-back rattlers which infest those regions.

"A scout may be encountered miles from any lodging place as he traverses the many miles he often has to make to scout an extreme wildcat



Many kinds of trouble beset the scout in the Seminole field. This was one

well. Especially is this true in the wide-open places of West Texas where miles and hours mean nothing when he is after the 'dope' (as information is commonly referred to by the fraternity). Or you might find him stuck when roads are bad or when the car acts up. Again, you might run upon him trying to extricate some unlucky tourist or other traveler from a ditch or out of the mud, for a scout is one of the good Samaritans of the highway.

SCOUT MUST BE VERSATILE

"Nearly every district in the different oil states has its own climatic conditions, with different terrain, roads and highways. Drilling methods vary too. Machines, spudders and cable tools may be used in one district, whereas in another district rotary rigs alone are used. As a consequence of such differences a scout has to be versatile, for he is transferred now and then from one area to another, and regardless of these differences has to get the job done. But a scout's infectious good nature, his ability to meet people and make friends, his knowledge, ability and courageous attitude help to get him straightened out soon in a new territory."

Here is Mr. Langston's description of how scouts obtain their samples of formations penetrated at various depths by drilling wells:

"During any particular week each scout picks up samples from all available wildcat wells and certain of the field wells in the area he is to cover. These samples are brought to the meeting headquarters on the day of the check meeting and taken directly to the sample-room or place of distribution. After the check gathering is over, the scouts go to this sample-room, where each scout receives his portion of all the samples previously deposited there.

"Sample-cutting consists of taking an average sample, usually about 10 feet of cuttings, and dividing it so that each scout present receives a portion. The cuttings are placed in paper sacks by the scouts, and each sack is stamped to show the location of the well, name of operator and the depth

They scouted the Cromwell field and the wildcats of south central and eastern Oklahoma. Standing, left to right: R. E. (Dick) Nelson, Sinclair Oil and Gas Co.; C. E. (Cliff) Savage, The Carter Oil Co.; C. E. (Charlie) Hewitt, Mid-Continent Petroleum Corp.; A. W. (Shad) Shattuck, The Texas Co.; Talbot (Sheik) Wildman, Amerada Petroleum Corp.; O. P. (Oaky) Dallard, Empire Gas & Fuel Co.; Seward Loyon, Roxana Petroleum Corp. Sitting: C. C. (Chump) Hilderbrant, Phillips Petroleum Co.; V. E. (Vick) Crouch, Pure Oil Co.; C. E. (Mike) Michaels, Deep Rock Oil Corp.; Harry Galey, Gypsy Oil Co.

Thrills But

By T. F. SMILEY

These men were chief scouts in the Mid-Continent territory in 1925, and the picture was taken just a few months before the gush of oil at Seminole transformed scouting technique. Back row, left to right: E. A. Bacon, Roxana Petroleum Corp., now head of Shell Petroleum Corp.'s crude purchasing department; Ralph C. Steinman, Sinclair Oil & Gas Co., now chief scout Sinclair Prairie Oil Co.; H. M. Mauldin, Pure Oil Co., now district land man in southern Oklahoma for Indian Territory Illuminating Oil Co.; Harry Norris, Prairie Oil & Gas Co., transferred to Sinclair Prairie when Prairie Oil & Gas Co. was taken over by the Sinclair interests; H. L. Curry, Shaffer Oil & Refining Co., now scout for Deep Rock Oil Corp. Front row: W. R. Thawley, Gypsy Oil Co., now chief scout for Gypsy division Gulf Oil Corp.; G. A. Schwab, Waite Phillips Co., now head of Barnsdall land department; Sam Martin, Texas Co., dead; G. B. Reneau, Tidal Oil Co., now chief civil engineer in East Texas for Tide Water.

from which that sample was taken. Succeeding samples are handled likewise until that particular well is finished. The samples are then bundled together in large sacks and each company represented receives a full set. Each well in the entire district from which samples are being taken, is handled in this way weekly."

Seminole marked the dividing line between the old school of scouts and the new. Although the oil scout of the early twenties performed a task different from that of his prototype of the eager eighties, the change had been gradual. But when the No. 1 Tolof Fixico, on a lease near the center of Seminole County, Oklahoma, owned jointly by R. F. Garland and the Independent Oil & Gas Co., hit the pay at 4,069 feet July 16, 1926, a new work pattern was drawn for the oil scout.

DUTIES WERE NOT RIGOROUS

Before that epochal well came in, opening a field destined to upset production records and to revolutionize certain phases of petroleum engineering practice, the duties of the oil scout had not been of a rigorous sort. He may have thought them so at the time, but as he looks back now they do not appear heavy or exacting. The check meeting had become a common device for exchange of information by scouts in the same field, but Seminole brought about a distinct change in the character, quantity and quality of the information itself.

Under the old dispensation a scout's task consisted primarily in reporting depths of drilling wells, completions and production records. Even

Scouts waiting for a Texas well to come in

the check meeting was a rather informal affair which had grown up in the decade preceding Seminole. A chance meeting on the road, in the field or in the hotel, with a swapping of facts concerning a few wells (sometimes with mental reservations), was the forerunner of the check meeting. Which is to say scouting used to be essentially an every-man-for-himself enterprise.

The scene changed. Within 60 days after the No. 1 Fixico, with its 8,000 bbls. daily production, penetrated the Wilcox treasure-sand more than 100 strings of tools were at work in the field. In another year 666 completed wells were pouring out 530,000 bbls. of oil daily, while hundreds of rotary drills were grinding their way into the earth to bring up still more. At one juncture there were more than 450 drilling operations in progress simultaneously. The number of pools jumped from one to nine.

News of the Garland-Independent strike precipitated a scramble for leases. All the major oil companies and many of the smaller ones rushed scouts and lease men to the hottest spot in the oil world. Each new hole spudded in became a center of excited interest. Information disclosed by the drill was of extreme importance to operators and of course to dealers in leases and royalties. Each detail concerning depth and formations encountered was hungrily awaited. The rather easygoing scout methods of the past would not fit here. A new day had arrived, and the manner in which oil scouts of the period greeted it forms a shining chapter in the annals of the craft.

There was notably little confusion and lost motion from the first, and such as there was vanished rapidly as scouts on the ground, tackling a difficult task with intelligent enthusiasm, systematized their work to make it thorough and effective.

Cooperation came to be something more than a word in the dictionary.

SOMETHING MORE THAN A WORD

Within less than a week the scouts at Seminole had adopted a system by which a mass of minute and tremendously valuable information was reported daily, with the regularity of the sunrise, to the offices of the companies represented.

At the stroke of 9 each morning the scouts assigned to Seminole ranged themselves at a long table in a small building in the north end of the town. Their number varied as the importance of pending developments rose and fell. Ordinarily there were 12 to 15, but on occasion about 25 crowded the little headquarters. Each man had his place at the table. At the head sat the czar, as he was called. This czar, always a man who commanded the respect and confidence of his fellows, was chosen by them to preside over their daily check meetings, to assign the scouts to various districts in the field, to settle any minor differences that might arise and generally to act as an administrative head. Districts, each with its group of wells, were assigned to the scouts rotatively, precluding ground for any suspicion of favoritism.

Fred J. Hill, now assistant to Jess Scarborough, vice president of the Mid-Continent Petroleum Corp., in charge of the land department, was czar at Seminole throughout that field's boom period. At each check meeting Mr. Hill had before him a list of all the leases in the territory on which oil operations were under way. These were arranged alphabetically, and as he called out a lease the scout covering it would give his report, covering new locations; status of all important drilling wells; depths of holes, with top and bottom of formations passed; completions and daily gauge of production, which at one stage totaled more than 500,000 bbls.

Some kinds of information were reported weekly instead of daily; for instance, pipe-line runs, tankcar shipments, crude runs to storage and "air and water" reports. Allusion to the air and water reports brings to mind the fact that the air- and gas-lift, employed for the most part experimentally up to the time Seminole was opened, found general application in that field. When a well was put on air- or gas-lift the scout covering the district reported the effect on oil recovery and whether the quantity of water produced with the oil increased or declined.

When the reports were finished each scout, armed with all the information contributed by his fellows, rushed to the nearest available telephone and turned in a complete report to his company's office. By 12 o'clock, as a rule, the executives of these different companies had in hand Seminole's developments for the preceding 24 hours; and the developments often were of utmost importance in determining what step a company should take next. "Geological tops" (the depths at which the drill entered a formation which served as a marker) were strutinized carefully. If the Viola, a marker of extreme consequence, ran high on the structure, lease and royalty values on nearby

Doghouse in South Burbank field used as scout headquarters. And that's Cliff Savage

land shot up spectacularly. An instance is recalled in which royalty that cost $150 an acre soared to $1,500 when the Viola was found to be high in a test well.

Since Seminole the qualifications of an efficient scout have undergone distinct change. It would not be within the truth to say that geological, geophysical or engineering training is required, but it is unquestionably true that the more a man knows of any one or all of these sciences the better equipped he is for scout work, and there is an increasing tendency among oil companies to look for some degree of technical knowledge when they have scout positions to be filled.

At Seminole scouts began to seek the companionship and counsel of engineers and geologists in the field, for it was becoming evident that men of technical training were destined to fill a larger place in the oil industry, and it was apparent that the more readily a scout could speak the language of these men, the more valuable information he could get from them and the more intelligently he could pass the information on to his chief.

In the pre-Seminole period men who had worked in the oil field were sought to fill places as oil scouts. A tooldresser was regarded as particularly well fitted if in addition to his practical training he was trustworthy, accurate and possessed a fair education. Far from being of no consequence, actual derrick experience from the fourble-board to the brake-lever is still of immense value to the oil scout, just as an apprenticeship on the lease makes a more capable geologist, engineer or production superintendent. But mirroring the change in emphasis is the infiltration into the scouting fraternity of a growing number of men who know something of at least the rudiments of petroleum engineering, geology and geophysics, subjects of which the old-time scout knew nothing and needed to know nothing.

Expressive of the transition which has taken place in the field of oil scouting are the annual conventions of the National Oil Scouts Association of America, Inc., which was organized in 1924. Its membership now covers Texas, Oklahoma, Louisiana, Arkansas, Kansas and New Mexico. Last year the Mid-Continent Oil Scouts and Land Men's Association, which had been conducted as a separate organization, was merged with the national body.

The eastern fields are now so thoroughly proven up that there is virtually no scouting as it is carried on between the Mississippi River and the Rocky Mountains. As early as 1915 P. C. Boyle, himself a pioneer scout along Oil Creek and later nationally known as a publisher, wrote a preface to J. C. Tennent's book "The Oil Scouts," in which he referred to the scout of the Pennsylvania fields as "now a memory."

In California it is the practice to place scouts in the pipe-line division. There is a marked difference between their work and that of their fellows on the eastern side of the Rockies. The California scout is assigned to watch important wildcats and deep tests, but he also is required to report production runs, crude and gasoline storage, and refinery runs. There is no formal organization of California scouts.

Cooperation is the keynote of the National Oil Scouts Association, which is exerting a strong influence in the direction of higher standards in scout work. The new interests which now engage the oil scout's attention are indicated by the subjects discussed at conventions. For instance: "Core Analyses as a Control to Well Completion," "Acidizing of Wells," "Governmental Invasion of Property Rights," "Cooperation in the Scouting, Land and Geological Departments," "Repressuring an Oil Sand," 'Core-Drills and Geophysical Instruments." Doesn't sound much like the old free-and-easy, how-deep-are-you days, does it?

Rex Dawson, formerly chairman of the Mid-Continent association's board of directors, said at one of the conventions: 'It is deplorable that the prevailing opinion among the uninformed is that all a scout does is to drive a car from well to well and ask, 'How deep are you?' Let us correct this."

Writing in The Lamp, published by the Standard Oil Co. of New Jersey, Mrs. Gladys L. Savage said: "Scouts have been called the eyes of the industry.' They are also the ears, the noses, the shock-absorbers, reception committee, detectives, entertainers, barometers, speedometers and walking filing-cabinets."

The original scout of glamorous Oil Creek days in Pennsylvania, "night rider of the hemlocks" he has been called, belonged to a romantic era of oil; and he needed a degree of resourcefulness, alertness and willingness to face hardship and danger which is not demanded now. The only men now living who scouted in those adventurous days are believed to be Jo Cappeau, who looks after oil interests from an office in Tulsa; "Billy" Edwards, well-to-do retired operator, residing in Pittsburgh, Pa., and George H. Torrey, oil operator in Oil City, Pa.

The oil scout of the eighties was a daredevil adjunct to a gambling phase of petroleum, when pipe-line certificates representing oil in storage were a medium of mad speculation. The scout of 1937 is not called upon to take a chance of being shot by guards posted at a "mystery" well. He does not have to resort to strange and devious ways of finding out the depth of a drilling well. But he performs an immensely useful work, contributing to the smooth and efficient operation of his company. The night rider of the hemlocks has faded into history. His successor is as firmly established as the driller and the production superintendent.

SWEDEN FIELD

(Continued from Page 11)

Both are being drilled by the same contractors, the discovery well rig being moved to the Miller location, and another rig moved on the Herberger. Development is being started on a 10-acre unit basis.

Another test is being started by Frank Gravis about 4½ miles northeast of the discovery, 330 feet from the west line and 2,718 feet from the south line of the F. Vaello Puig 1,760.73-acre tract.

With only one well, little can be determined as to type of structure. Some are of the opinion it is a deeply seated salt dome, as might be expected since the area is in the old Rio Grande embayment where considerable geophysical work has been under way. On the other hand, some theorize this is another old shoreline trend similar to the Jackson shoreline of the Government Wells trend, about 25 miles west.

MANY POOLS

(Continued from Page 12)

bbls.; Ellis County, 2,667 bbls.; Reno County, 6,740 bbls.; Russell County, 8,953 bbls. The net increase in the fields west of the meridian was 45,637 bbls. per day. Individual pool gains included Hauschild, in Rice County, 3,835 bbls. Gorham and East Gorham, in Russell County, 1,634 bbls.

NORTH AND SOUTH LOUISIANA

Louisiana had the greatest percentage of production increase over 1935 and is holding its own this year. The Louisiana side of the Rodessa field is held down by the rigid enforcement of the gas-oil ratio fixed by state conservation authorities. Its production in the past week was only 8,400 bbls. above what it registered a year ago, but in the week ending February 6 it was 23,700 bbls. higher than in the same period in 1936.

In Coastal Louisiana the most important production gains have been Bayou St. Denis, 8,400 bbls. per day; Caillou Island, 7,650 bbls.; East Hackberry, 1,950 bbls.; Old Hackberry, 2,100 bbls.; Evangeline, 1,850 bbls.; Gillis, 2,300 bbls.; Herton, 4,700 bbls.; Mamou Prairie, 3,400 bbls.; New Iberia, 15,750 bbls.

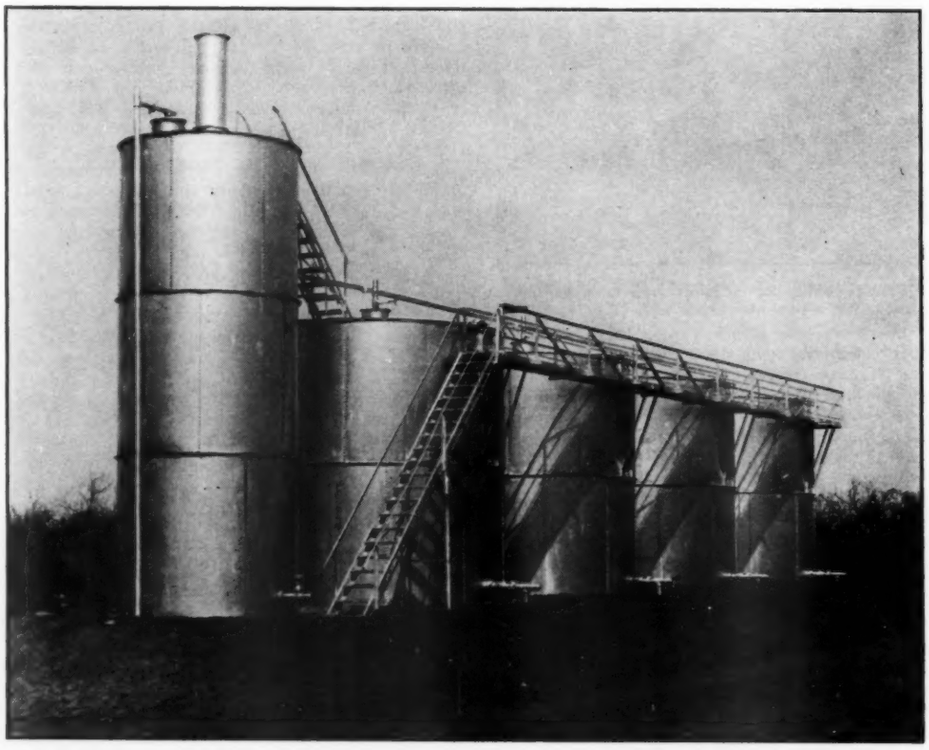
In the Rocky Mountain fields Lance Creek, Wyoming, showed the greatest increase with 8,900 bbls. per day more than a year previously. In Montana the Cut Bank field made a gain of 2,350 bbls. per day.

In southeastern New Mexico, which is generally considered a Mid-Continent field, the Eunice pool, in Lea County, jumped 20,000 bbls. per day in a year's time and Monument 22,900 bbls.

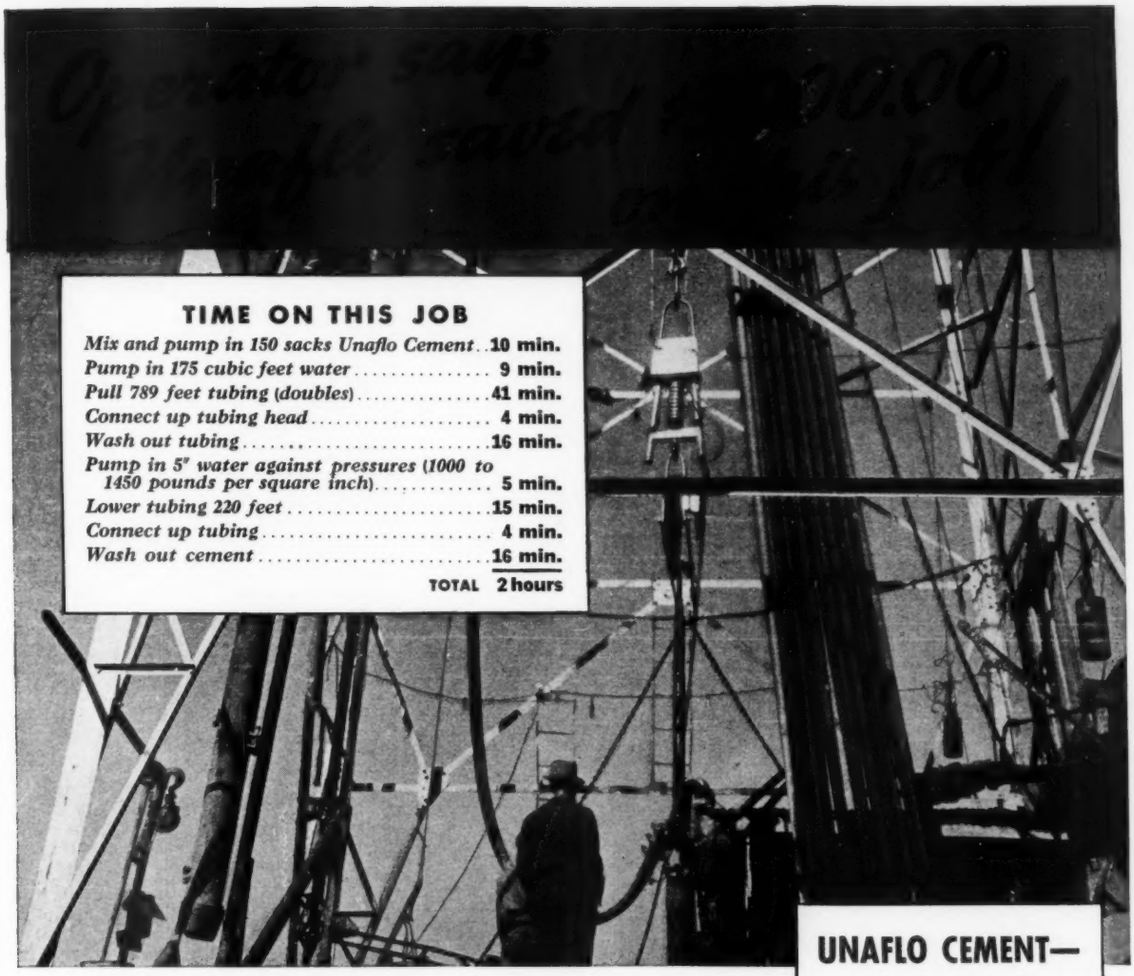
There were no notable increases in production in California as the state as a whole produced only 10,000 bbls. per day more.

In Pennsylvania Grade territory the Bradford field increased 7,000 bbls. per day; Allegany, 1,500 bbls.; and the Kane to Butler district, 1,800 bbls.

It is safe to assume that the fields here listed as having made substantial gains over their production a year previously will be called upon to supply much of the increased demand expected this year. However, there are numerous pools not listed here that will show increasing production as the year progresses—fields like Flour Bluff in Texas, Wellington in California, Buckeye in Michigan among the more promising, and a host of others which are on their way up.



Field storage battery in Sweden field



TIME ON THIS JOB

Mix and pump in 150 sacks Unaflo Cement	10 min.
Pump in 175 cubic feet water	9 min.
Pull 789 feet tubing (doubles)	41 min.
Connect up tubing head	4 min.
Wash out tubing	16 min.
Pump in 5" water against pressures (1000 to 1450 pounds per square inch)	5 min.
Lower tubing 220 feet	15 min.
Connect up tubing	4 min.
Wash out cement	16 min.
TOTAL	2 hours

● An Oklahoma City well was found to have 259 feet of open hole below the 7-inch shoe at 6122 feet. To plug back, tubing was lowered to 6113 feet, and water pumped in for more than two hours without returns.

150 sacks of Unaflo Cement were mixed into a heavy slurry, pumped into the tubing and partially displaced with 175 cubic feet of water.

The tubing was lifted 789 feet by pulling twelve doubles and one single, and flushed. The cement was squeezed at 1450 pounds per square inch.

After applying the squeeze there still remained an excess of 220 feet of cement in the casing. After one hour and 44 minutes, the tubing was lowered 220 feet into this cement which had been subjected to temperature and pressure; circulation was reversed and the excess cement (220 feet) was washed out through the tubing in 16 minutes. A perfect job completed with the top of the cement body exactly where the operator wanted it.

Unaflo made it possible to complete the job without moving in tools to drill out the excess cement. Try Unaflo on your next job.

Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), Amicable Bldg., Waco, Texas; Kansas City; Tulsa; Oklahoma City.

UNAFLO CEMENT—

1. Gives you more time to get it down.
2. Remains fluid longer.
3. Follows irregularities of well bore and casing.
4. Hardens thoroughly with high density after it is placed.
5. Displaces contaminating elements in the well.
6. Not stiffened by mud contamination.
7. Not stiffened by salt water contamination.
8. Sets satisfactorily in sulphate water.
9. Requires no ice.
10. Makes squeeze and plug-back jobs easier, surer and more successful.

U-10

USS

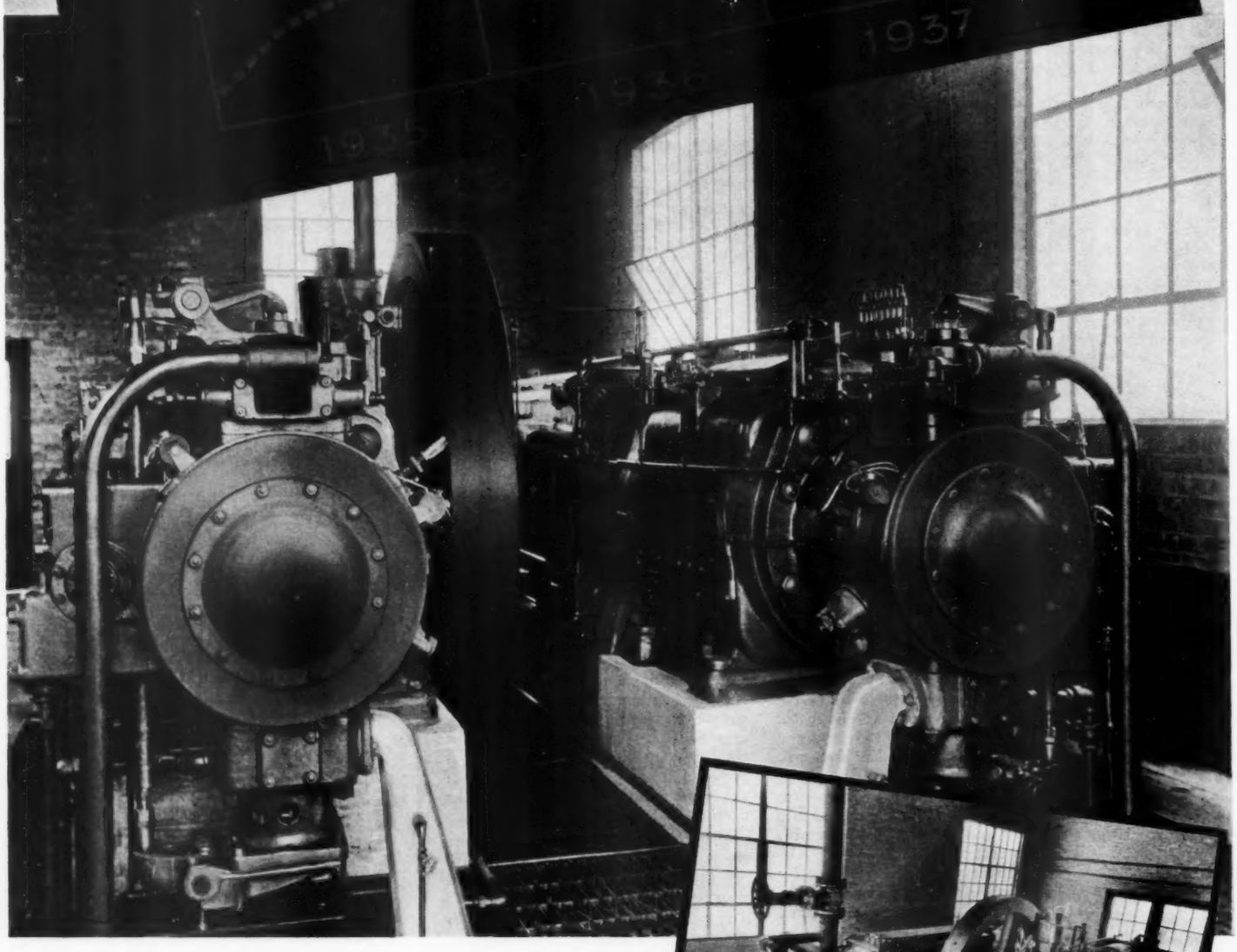
UNAFLO

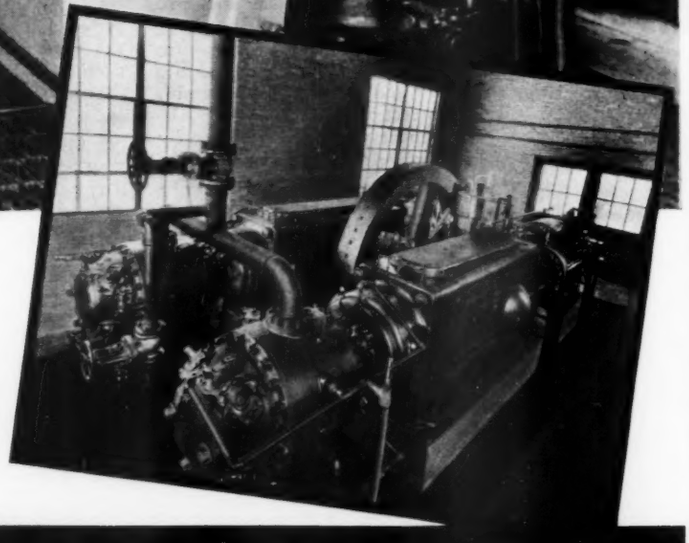
UNAFLO

FOR SAFE DEEP-WELL CEMENTING

A "SAFE" FORECAST

The curve showing gas engines installed for all types of refinery power will continue upward. Cheap fuel gas at refineries make gas engine power unusually attractive for generating electric power for direct-driving compressors; water pumps; hot-oil pumps; etc.





CONVENIENT, RELIABLE, ECONOMICAL

This very compact compressor unit is operating in the plant of Old Dutch Refining Company, Muskegon, Mich. Rated 400 H. P. at 200 r. p. m. The 19" x 20" double-acting twin gas engine direct-drives the 11" x 20" compressor cylinders. The unit is a Cooper-Bessemer Type 40.

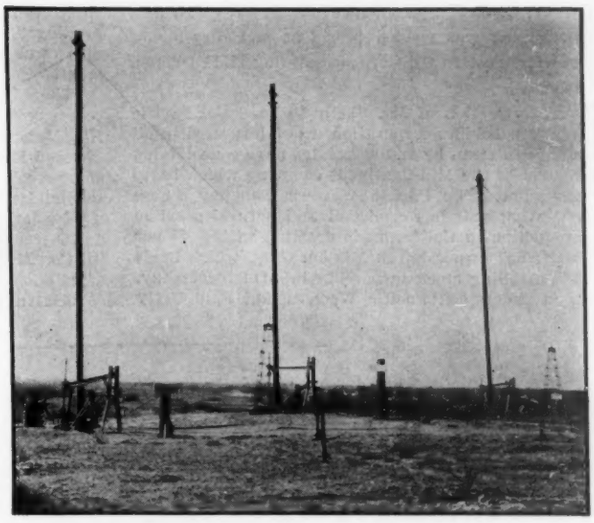
THE COOPER-BESSEMER CORPORATION

Mount Vernon, Ohio — PLANTS — Grove City, Pennsylvania

25 West 43rd St. New York City
Mills Bldg. Washington, D. C.
640 East 61st Street Los Angeles, Calif.
201 East 1st. Street Tulsa, Oklahoma
631 Spring Street Shreveport, La.
Magnolia Building Dallas, Texas
53 Duncan St. Gloucester, Mass.
Esperson Bldg. Houston, Texas

Deeper Sand Discovery Starts Play in Southern Wilbarger County

By L. E. BREDBERG



CLOSELY DRILLED—Each well producing from different pay

FORT WORTH, Tex.—The deeper pay discovery in the heart of production in the old Rock Crossing field, on the Waggoner ranch in southern Wilbarger County, will no doubt encourage drilling, deepening of old producers or shallow, abandoned tests in quest of the deeper pay, the tenth producing horizon opened in the area.

Phillips Petroleum Co. opened this new deep horizon, believed to be the Landreth lime, in its No. 51 W. T. Waggoner ranch, NE cor. section 44, Block 4, H.&T.C. Survey. The well was originally completed December 22, 1925, in the Vernon sand, the only well in the Phillips block completed in that pay. Total depth was 1,198 feet, and its initial production 20 bbls. per day, falling to around 3 bbls. (pumping) recently, when the company decided to drill it deeper in quest of an oil horizon logged in a dry hole drilled about 1,500 feet southeast in section 43. That test, No. 2-N Waggoner, was drilled to 4,200 feet, failing to make a producer at that time, although it had a good showing of oil, bailing oil and water from the saturated lime at 3,080 feet. It was later plugged back to 2,601 feet and produced from the Landreth lime at that depth.

The new discovery, No. 51, was formerly carried on maps as No. 5. In drilling to its present total depth of 3,076 feet, where it is producing from 8 feet of saturated lime, and through 13 feet of cutting in the hole, through the casing and 1¼-inch choke on same, it gauged 92 bbls. per hour on a three-hour test of the Railroad Commission, flowing naturally (without shooting or acidizing). Gas tested around 1,300,000 feet per day, with the oil. It passed up eight producing horizons in seeking a deeper pay, or a deeper section in the Landreth lime which produces below 2,500 feet. In drilling below 2,500 feet the entire section was nearly solid lime, the producing horizon being solid lime also, and not sandy lime. This saturated streak was topped at 3,068 feet; total depth is 3,076 feet. Elevation is 1,158.5 feet (ground). How much more of the pay could be drilled is not known as it showed for a good well from only 8 feet in the lime. Its daily allowable is 116 bbls.

The reason for carrying down this well was that when completed at 1,198 feet, 10-inch casing was set at 1,186 feet, insuring a good hole if it was decided to drill deeper. George Shaner, geologist, now division superintendent for the Phillips company in the Oklahoma City field, who was with Landreth Production Co. when Phillips took over the Landreth block in the Rock Crossing field, recommended the deeper drilling.

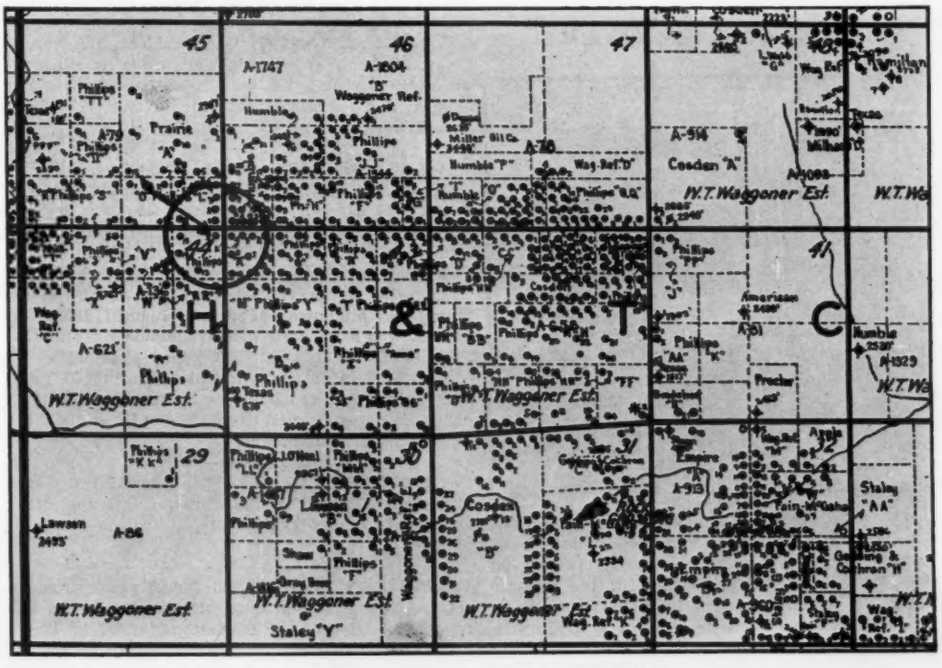
The Landreth company sold all but a fifth interest in the block for $3,250,000. Phillips Petroleum Co. has 262 producing wells in the field and a number shut down. Humble Oil & Refining Co. holds leases on the section to the northeast, and is moving in rig for a northeast offset to the deep discovery. Phillips will skid rig from the discovery to a location to the east. All other shallower wells in the field are drilled 150 feet from the lines, and 300 feet apart, except in case of twin wells, but the deeper wells will be drilled 330 feet from the lines, or 660 feet apart. Twin and triplet wells may be seen in various parts of the field, being drilled close together because they are producing from different horizons.

Production in the field is coming from the following horizons: Vernon sand, around 1,175 feet; Dyson sand, around 1,800 feet; AA sand, 1,900 feet; "U" sand, 2,200 feet; Noble lime, 2,300 feet; Milham sand, 2,350 feet; Second Milham, 2,390 feet; Sloan sand, around 2,415 feet; Landreth lime, below 2,500 feet.

This well logged top of Landreth lime at 2,556 feet. When it was first drilled it was to be carried to the Dyson sand or Noble lime pay, but showing as a producer from the Vernon sand it was completed at 1,198 feet. Deepening was started January 1, this year, Bason Drilling Co. of Wichita Falls doing the drilling. It was completed February 26, a portable cable tool rig being used to drill in after carrying it from 1,198 feet with rotary rig. Seven-inch O.D. 24-pound casing, float shoes and collar were set and cemented with 175 sacks of cement at 3,057 feet. When the plug was drilled the well started flowing, and therefore was not cleaned out to the bottom. The oil is 40 gravity, whereas most of the oil produced on the ranch runs around 36 to 37 degrees.

Most of the new deep drilling will be done on the Phillips Petroleum Co.'s block on the section northeast of the discovery, but other operators in the Rock Crossing, Zacaweista and Grayback fields will no doubt test their leases in quest of this deeper pay.

Frank Perry is superintendent for Phillips Petroleum Co. in this district, with headquarters at Vernon, Tex.



DEEPER PAY—Circle marks discovery well

SAN ANTONIO, Tex.—Edgar B. Davis' plan for reorganization of the United North and South Development Co. has been approved by Judge Robert J. McMillan in federal court, granting until March 15 to carry out provisions of the reorganization, conserving properties in Darst Creek and Buckeye pools.

Skelly Heads Pacific Western Large Holder of Mission Corp.

W. G. Skelly, president of Skelly Oil Co., Tulsa, last week was elected president and director of Pacific Western Oil Corp., succeeding H. P. Grimm, resigned.

The election of Mr. Skelly to head the Pacific Western holding corporation was interpreted in oil circles to mean he and associates have consolidated control of the Mid-Continent company which bears his name. The Pacific Western company whose operating unit has crude oil and natural gasoline production in California is credited with a 45 per cent stock ownership in Mission Corp. which holds a controlling stock ownership in Skelly company. It is understood Pacific Western and Paul Getty interests have sufficient stock to give them a controlling stock ownership in Mission Corp. which also owns approximately 18 per cent of the common stock of Tide Water Associated Oil Co.

The 55 per cent stock ownership in the Skelly company was acquired by the Standard Oil Co. of New Jersey during the depression. The company divested itself of the Skelly interest in 1934 by issuing stock in Mission Corp., a holding corporation, to Standard of New Jersey stockholders. Standard of New Jersey later in the same manner distributed its 20 per cent interest in Tide Water Associated Oil Co. Most of the present officials and directors of Mission Corp. are also officers of Tide Water Associated Oil Co.

HOWARD

(Continued from Page 14)

CLASSIFICATION OF RESERVOIRS

There are many classifications of oil fields but a new one is necessary for use in the discovery of unreflected pools.

I. Pools directly connected with unconformities. (a) Limestone oil fields on highs or on the flanks of highs. (b) Sandstones on uplifts.

II. Pools formed along or near former shore lines.

III. Pools not definitely known to be closely related to unconformities or shore lines.

Ten or 15 years ago, the pools in Class III would have far exceeded the others. Today their number is diminishing as we learn more geology. Most of those not related to unconformities or shore lines lie on well defined structures. The others are the ones that are hard to find.

To find them we shall need to devote hundreds of thousands of dollars to maps of two kinds:

(a) Paleogeographical maps showing the distribution of land and sea, not during—say—the Lower Ordovician, but during 20 or more definite periods in the Lower Ordovician.

(b) Paleogeological maps showing the outcropping formations on every known unconformity. Moreover, we must recognize that we have an unconformity every time we have a break in the succession of sediments.

In the past we have heard of areas of nondeposition as if it were possible that an area below sea level could remain for any length of time without receiving sediments. Soundings off our present coasts show that large areas of nondeposition do not exist today and there is no reason why they should have existed in the past.

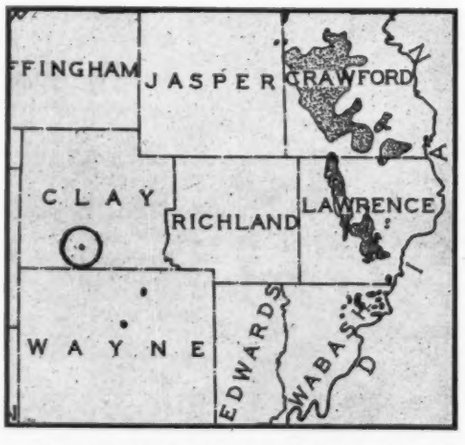
Fig. II shows the distribution of the productive areas of northwestern Ohio on the Cincinnati Arch. It might also be considered to be a paleogeological map on the top of the Trenton showing the outcrop of a single partially eroded bed. It can be seen that there is no relation between the distribution of individual pools and local structure. Particularly in Allen and Auglaize counties, the distribution of the pools simulates the distribution of a single deeply dissected bed whose attitude conforms in general to the regional topographic slope. The scattered pools in Seneca and Wyandot counties may refer to a different pay horizon or to outliers of the same bed.

Major companies will make such maps for the whole country, smaller companies will concentrate on smaller areas but the maps will be made. Their cost will vary with the amount of material that is now thrown away. Their accuracy will vary with the amount of cuttings and cores that we save.

If we consider the discoveries of the past we shall find our geologists were first successful in finding new fields after the wildcatter showed them what to look for. Lately, however, the first of the new types of field has been found by geologists who have persisted in spite of the conservatism of others in going ahead and getting a well drilled. To men of vision, persistence, and technical training we owe Seminole, Oklahoma City, Fitts, Conroe, Rodessa and many others. Men of that type will find many more. The next stage is the slow, painstaking search for shore lines and porous beds below unconformities. Here we shall probably depend on cooperative research for our results, just as other sciences have entered the cooperative stage.

For the most efficient work, paleontologists and petrographers will have to work on the problem of correlation. Physiographers will be needed to compare their results with present day processes and land surfaces. The processes of sedimentation need to be studied in much greater detail than they have been up to the present time, and we may even have to carry on large-scale experiments on sedimentation. Finally, we need to apply much more chemistry to our study of reservoirs than we do now. Chemical reactions are often important in the formation of our reservoirs, and in many places they play an important part in changing them, even after the oil has entered them. As one of these changes involves the deposition of calcite, thereby reducing the permeability of the reservoir, this phase of the study can be carried into the production of oil. This is also true of the studies on sedimentation. Secondary methods of recovery will differ widely in a pool located in a cross-bedded sand from those in a uniform sand body.

ILLINOIS DISCOVERY



The Pure Oil Co. No. 1 Weller, in section 33-3n-8e. Clay County, Illinois, is reported to have a 75-bbl. per day showing at approximately 2,600 feet. It is in the Cypress sand of the Chester formation, which produces in fields east of it. This well is one of two tests Pure is drilling in Illinois with deep sands as the objective and has little significance in relation to the deep drilling campaign of the company.

Thompson Not to Call Compact Demanding Stock Survey

Col. E. O. Thompson, chairman of the Interstate Oil Compact Commission and member of the Texas Railroad Commission, is reported to have said the next meeting of the compact commission will not be held until the Bureau of Mines produces the results of a survey of crude oil in storage on which the compact commission has been waiting.

The meeting had been scheduled for Oklahoma City on March 12.

It was stated in Washington the Bureau of Mines could not complete the survey of crude oil stocks for three months. It is not believed present stocks are critical one way or another. For several months the bureau has not recommended further reductions in stocks and has no intention of doing so soon.

North Central Texas Meeting

WICHITA FALLS, Tex.—Members of the North Central Texas Oil and Gas Association at their annual meeting here heard addresses by George A. Hill, president, Houston Oil Co., and vice president of the American Petroleum Institute; Railroad Commissioners E. O. Thompson and C. V. Terrell and a number of state officials. Congratulation on the present condition of the industry was tempered with fears about the growing burden of taxation.

New officers of the association are R. L. Underwood, president; N. H. Martin, first vice president, and P. F. Gwynn, second vice president.

Production Tax Bills

The Oklahoma house of representatives struck from its calendar on February 26 by a vote of 63 to 44 the Flanagan bill increasing the gross production tax on oil from 5 to 10 per cent.

The Specht bill, which also provides for a 10 per cent production tax on oil, is before the revenue committee of the house.

Foreign crude transferred to fuel tanks of an importing ship in a United States port is subject to the import tax of one-half cent per gallon, the Court of Customs Appeals ruled in an appeal brought by Sinclair Refining Co.

OBITUARIES

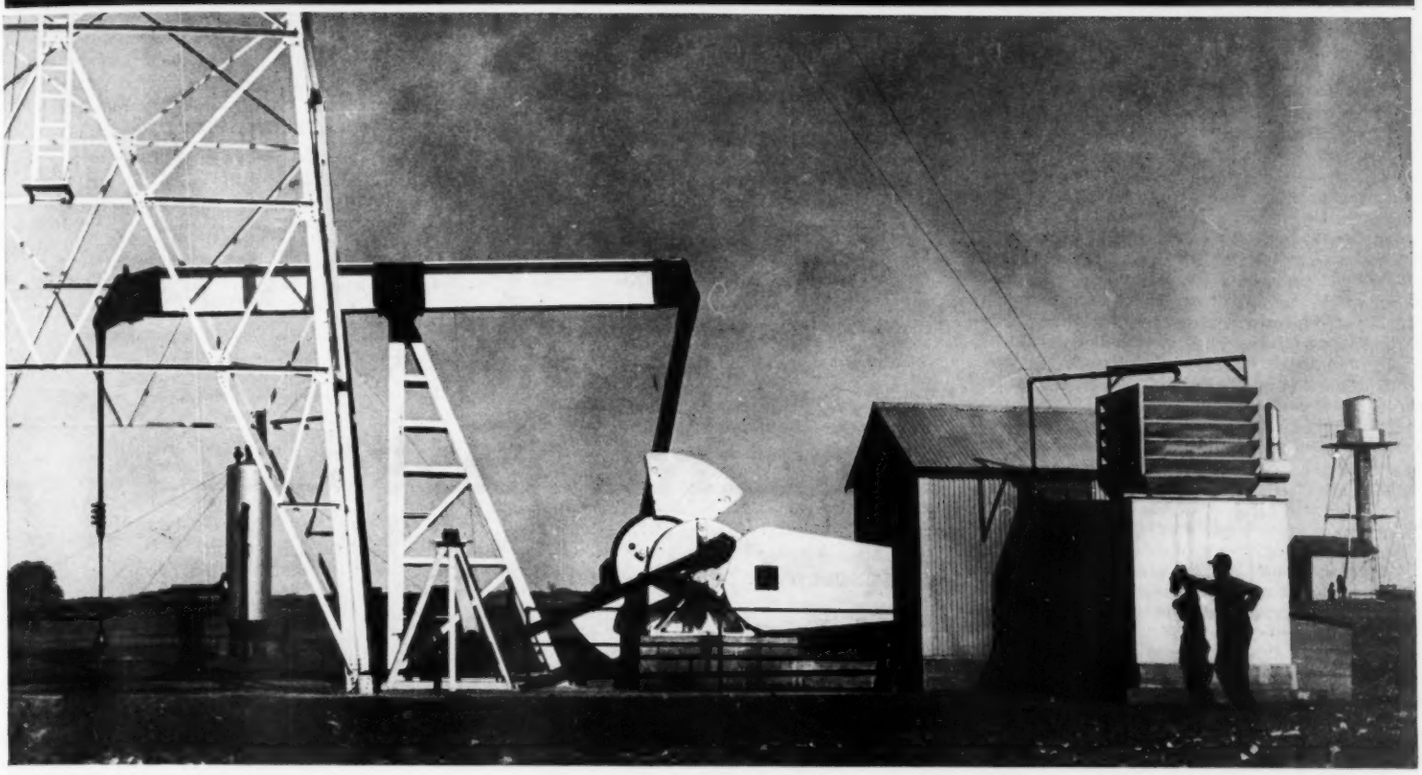
JAMES E. WINANS, 66, president Winans Oil Co., died in Fort Worth, Tex., after an illness of nearly a year. He was a native of Brashear, Miss., and operated in the Mexia and other fields in Texas.

EARLE A. CLARK, 54, vice president Columbia Gas and Electric Co., died at Pittsburgh, Pa., February 27 after a brief illness. He was born in North East, Pa., and was reared in the oil and gas fields of that state. During summer vacations he assisted his father, a well-known operator in Pennsylvania and an early developer of the Nowata field in Oklahoma. From 1917 until 1930, Mr. Clark was associated with Oklahoma Natural Gas Co. in Tulsa, and in 1930 joined Columbia. He specialized in natural gas and during his 31 years in the oil and gas business became prominent in the development and perfection of methods for the measurement of gas.

ROBERT W. GOTSHALL, 55, general sales representative for Caterpillar Tractor Co., died after an illness of six months in St. Francis Hospital, Peoria, Ill.

WILLIAM M. HOWARD, 56, for 23 years manager of the New York and Pennsylvania district for the American Glycerine Co. (DuPont) died in Bradford, Pa., on February 25, following an operation. He was a well shooter for 15 years before he was made manager.

BEAM AND POST ASSEMBLIES



For Single Well and Back Crank Pumping...

National Beam and Post Assemblies are now available in four sizes for use in conjunction with National Reduction Gears of 10, 20, 30, and 40 h.p. capacities.

Designed for installation on concrete foundations, they provide a most economical means of pumping single wells or multiple pumping through back crank equipment.

THE NATIONAL SUPPLY COMPANY OF DELAWARE

National

NSCO "REG. U. S. PAT. OFF."

Natural Gas News

Texas Order Upheld

WASHINGTON, D. C., Mar. 1.—The validity of an order of the Texas Railroad Commission, issued under House Bill 266, prohibiting the Henderson Co. from producing and using sweet gas for the manufacture of carbon black in the Panhandle field was upheld by the Supreme Court of the United States.

Justice Brandeis, in the case of Henderson Co. v. Thompson, said, "The statute here challenged is not directed against any term of contract, it deals merely with the use of an article of commerce, and its effect upon contracts is incidental. The distinction was pointed out by the district court."

The Henderson Co. contended that in the Panhandle field the prohibition of the use of sweet gas in the manufacture of carbon black was arbitrary and unreasonable. The basis of the argument was that pressure in the sour gas area is less than pressure in the sweet gas area, hence, if withdrawals of sour gas are permitted to the extent of the requirements of the carbon black industry, the sweet gas would migrate to lower pressure areas and become a part of the sour gas supply. This, the Henderson Co. argued would not be a conservation of the sweet gas supply.

"The loss of sweet gas (due to migration) may be relatively negligible," Justice Brandeis quoted the lower court. "And there is an abundance of factual support for the legislative prohibition against the burning of sweet gas for carbon black.

"No facts have been found," the court concluded, "which would justify us in pronouncing the action of the legislature arbitrary."

A.G.A. Annual Convention

The executive board of the American Gas Association in New York has decided to hold the nineteenth annual convention of the association in Cleveland, Ohio, the week of September 27.

Holding the convention in Cleveland will give visiting delegates an opportunity to inspect the American Gas Association's testing laboratory there. About 93 per cent of the gas appliances produced in the United States and Canada are approved by the association's laboratories. The Cleveland laboratory, in addition, conducts a great part of the research work carried out by the American Gas Association.

Wayne Gas Field Gone

WAYNE, N. Y.—After reports that rock pressure in the Wayne gas field had decreased to 10 pounds, authorities here expressed the belief the field is dead. Discovered with an original rock pressure of 780 pounds, the field for many months caused excitement in the Southern Tier. Reports indicate that many companies are pulling casing pipes and abandoning their wells as commercially useless and unprofitable.

The field was discovered shortly after the famous Meeker well in northern Pennsylvania. Two of the biggest operators in the local field are Tri-State Gas and Electric Corp. of Elmira and Belmont Quadrangle Co.

In the height of the gas excitement here between April, 1931, and December, 1931, high prices often were paid for leases and drilling rights.

Alma, N. Y., Gas Deal

WELLSVILLE, N. Y.—The Sylvania Corp. of Oil City has purchased five leases and five gas wells located in the town of Alma, near here, the largest gas field transaction in recent times and said to have involved $500,000.

A pipe line, 11 miles long, will be built, it is said, to serve the wells which will tap the Stone Dam and State line fields. The wells will not be tapped until completion of the proposed new line. Buffalo and Iroquois Gas Co. will buy the production, it is reported.

Properties bought include leases of G. L. Schrack, of Mansfield, O.; Wyoga Gas and Oil Co., Williamsport, Pa., on the Henry Knox farm, 400 acres; Schrack leases and well on the Knox-Lewis lease, 100 acres; Crane well and 31-acre lease; well and lease owned by Schrack and others on the Downs farm.

Texas Gas Tax

AUSTIN, Tex.—The house revenue and taxation committee has recessed a hearing on a bill by Rep. B. E. Quinn of Beaumont to increase the present 3 per cent first sale production levy to one-fourth of 1 per cent per 1,000 feet of gas on each pipe line or distributing company handling it.

Charles H. Keffer of Amarillo, speaking against the proposal, said last year's $600,000 production tax would reach $1,000,000 this year, due to the increase from 2 to 3 per cent made last October.

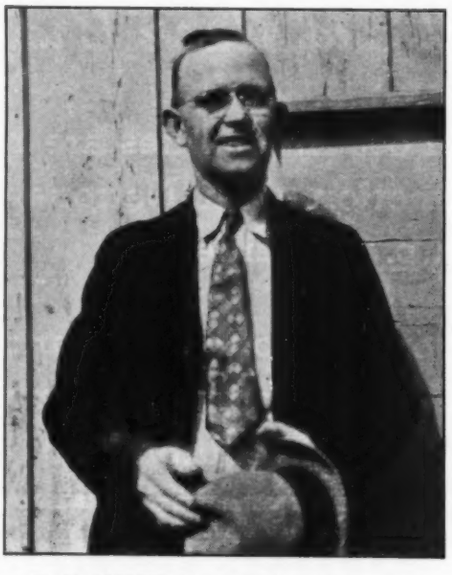
Gas for Ramona

The Oklahoma Corporation Commission has ordered the Oklahoma Natural Gas Co. to furnish service to the town of Ramona. J. B. A. Robertson, commission attorney, explained that the Oklahoma Natural built a plant in the town and furnished gas until three or four years ago when the lines were leased to the Kansas-Oklahoma Natural Gas Co. which notified the commission it could not continue operation.

Natural Gasoline

Production Higher in December

The upward trend in natural gasoline production was continued in December, 1936, according to a report prepared by the Bureau of Mines for that month. The daily average production in December was 5,372,000 gallons, or 30,000 gallons higher than the average in the previous month. The principal increases in December were in the Panhandle and in Louisiana with the rest of the gain widely distributed. The preliminary total of natural gasoline production in 1936 is 1,765,722,000 gallons, or 7 per cent above 1935, according to the report.



H. V. JARRETT—*Superintendent of Stanolind Oil & Gas Co.'s Tonkawa, Okla., gasoline plant*

The total production of the various districts for December, in gallons, was as follows: Appalachian, 7,284,000; Illinois, Michigan, Kentucky, 1,122,000; Oklahoma, 39,887,000; Kansas, 4,053,000; Texas, 45,698,000; Louisiana, 9,897,000; Arkansas, 925,000; Rocky Mountain, 6,148,000; and California, 51,516,000.

Refinery consumption of natural gasoline continued heavy during the month and stocks were reduced by about 4,000,000 gallons to 170,310,000 gallons on December 31. However, the total was about 15,000,000 gallons higher than stocks on the first of the year. Stocks at plant and terminals increased from 65,688,000 gallons on November 30 to 68,628,000 gallons on December 31, while refinery stocks were lowered from 108,738,000 gallons to 101,682,000 gallons at the end of the year.

Shipments of natural gasoline to other than refineries continued to resist the seasonal decline, the total of deliveries to jobbers and retailers rising from 10,350,000 gallons in November to 11,164,000 gallons in December. Exports also increased, 11,220,000 gallons going to foreign countries in December compared with 11,003,000 gallons in November.

The average vapor pressure of natural gasoline shipments rose from 20.9 in November to 22.0 in December.

To Start Henderson County Plant

FORT WORTH, Tex.—Fred M. Allison, head of the Cortex Petroleum Corp., has announced that the construction of a new gasoline plant in the Cayuga field, Henderson County, Tex., will be started within a few days. Equipment is ready to be moved to the site it was reported, the plant to be built on the Litchfield lease of the Cortex company through arrangement made by C. A. Middleton of the Minerva Refining Co.

Building Revolutionary-Type Plant

Phillips Petroleum Co. will shortly start construction on a new type of gasoline plant near the town of Lodi, Cass County, Texas. This plant, which is known as a combination plant, consists of a gas liquefying plant and polymerization unit which function in combination with each other to make either natural gasoline or motor fuel from the gas.

The gas liquefaction is accomplished by a new absorption method which permits the liquefaction and removal from the gas of comparatively large quantities of butane and propane, as well as natural gasoline, at very reasonable cost. Both the gas liquefying process and the polymerization process have been developed by the Phillips Petroleum Co.

It is contemplated that arrangements will be made to permit the industry to use this combination plant through a licensing agency.

Refinery Expansion

Barnsdall Corpus Christi Plant

CHICAGO, Ill.—The Barnsdall Refining Corp. has completed plans to build a Dubbs cracking unit, with a charging capacity of 5,000 bbls. a day, at Corpus Christi, Tex. Construction work will start immediately. The plant is to run on the company's own crude produced in the Placedo field. A new 6-inch pipe line, 70 miles long, which will bring the crude from the field to the refinery, is a part of the project.

Placedo crude contains practically no gasoline, but when it is cracked it yields a motor fuel of exceptionally high octane rating. The crude will be charged directly to the new unit and is expected to produce more than 56 per cent gasoline of 75 to 76 octane number.

Wharfage will be provided on deep water, where tankers will be loaded with gasoline to be distributed in the coastwise trade and for export. The low viscosity cracked fuel oil will also be transported by tanker to shipping centers on the eastern seaboard.

Barnsdall has signed a license agreement with Universal Oil Products Co. for the Corpus Christi unit and has let a contract for its construction to the Frick-Reid Supply Corp.

The Corpus Christi plant will be the fourth Barnsdall refinery. The others include a 4,500-bbl. per day plant operating at Barnsdall, Okla., equipped to skim, crack and make lubes; a 5,500-bbl. per day skimming and cracking plant operating at Okmulgee, Okla., and a 5,000-bbl. per day skimming and cracking plant operating at Wichita, Kans.

Alcorn Obtains TVP License

NEW YORK.—Alcorn Combustion Co. of Philadelphia has undertaken the selling, designing, construction and servicing of True Vapor Phase crackplants under terms of a contract entered into with Petroleum Conversion Corp., of New York, owner of the TVP patents. The contract by which Alcorn becomes licensing agent for Petroleum Conversion Corp., covers the United States and its territorial possessions.

Alcorn Combustion Co. started business in 1922 designing and manufacturing equipment for oil refineries. It has developed and patented new apparatus for heating liquids, vapors and gases and has designed, constructed or modified heaters and refining units for many refineries in the United States and foreign countries.

In addition to its home office at Philadelphia, Alcorn Combustion maintains branches in Tulsa, Houston, Los Angeles and San Francisco.

To Welcome Atlantic Employes

HOUSTON, Tex.—The Port Arthur chamber of commerce has announced plans for a banquet and reception for employes of the new Atreco refinery of the Atlantic Refining Co. to be held March 26 at the local high school. The city will extend a welcome to several hundred people, most of whom will come from Franklin, Pa., and Brunswick, Ga., where Atlantic plants are being closed.

Rectification Plant Completed

NEW YORK—Test runs were started last week through Tide Water Associated Oil Co.'s new propane and butane rectification plant at its Bayonne, N. J., refinery. Continuous production is expected to be possible within two or three weeks. The plant was designed and built to produce 45,000 gallons per day of propane and 7,500 gallons per day of butane from refinery gases which could formerly be used only as fuel in the refinery.

The plant will separate commercial specification propane and butane from refinery gases liquefied in an existing gasoline rectification unit. The new propane and butane plant was designed and constructed by Arthur G. McKee & Co. of Cleveland and Petroleum Engineering, Inc., Tulsa, Okla. Expenditure on the plant amounted to approximately $150,000.

To Enlarge Standard Refinery

Plans have been announced to enlarge the lubricating oil manufacturing facilities of the Baton Rouge, La., refinery of the Standard Oil Co. of Louisiana, a subsidiary of the Standard Oil Co. of New Jersey. The new facilities, it is reported, will involve an expenditure of $2,750,000. Under the Louisiana state laws the new properties will be exempt from all property taxation for a period of 10 years.

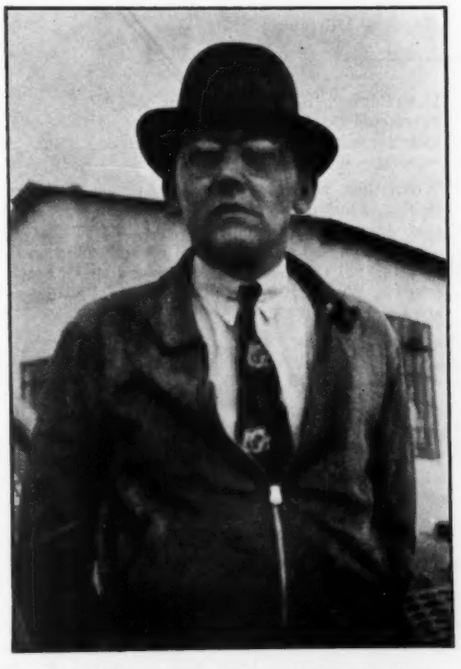
The Baton Rouge refinery for several years has been a large manufacturer of lubricating oils furnishing a large part of the oils sold by Standard of New Jersey subsidiaries in both foreign and domestic markets. The refinery with a capacity of approximately 100,000 bbls. daily operates with several grades of Mid-Continent including Rodessa which is especially suitable for the manufacture of lubricating oils. The plant has facilities for solvent refining and solvent dewaxing in the manufacture of lubricating oils and these will be enlarged and modernized in the new construction program.

New Refinery Planned

CALGARY, Alberta.—Mercury Oils, Ltd., and associate interests, headed by A. H. Mayland, are considering plans for a $500,000 refinery to be erected in the new crude oil area of South Turner Valley. Gas & Oil Products, Ltd., a subsidiary of the Mercury company, now operates a gasoline absorption plant in the same area.

Gulf Adds to Refinery Site

TOLEDO, Ohio. — Purchase of 30 additional acres adjoining its refinery site in Toledo, Ohio, is thought to be the first step in an expansion program there by Gulf Oil Corp.'s refining division. The company's engineering department at Pittsburgh is reported engaged on certain proposed developments. However, Charles B. Buerger, an official of the company, in confirming purchase of the additional land at Toledo said that "it is too early to disclose details of any proposed development."



Bert Leslie, district foreman, Champlin Pipe Line Co., Hutchinson, Kans.

Pipe Line Work

West Texas Pipe Line Rates

AUSTIN, Tex., Mar. 1.—Oil pipe line rate hearing of the Texas Railroad Commission was recessed indefinitely Thursday without testimony, subject to notice of another date. The hearing was to consider the reasonableness of oil pipe line rates, particularly from West Texas and the Yates pool, and had been called on protest of West Texas producers and royalty owners against a 12½-cent higher rate to tidewater than charged East Texas.

Charles L. Black, attorney for Illinois Pipe Line Co., serving Yates pool, said until specific complaints about individual rates were made, the companies were unable to prepare data and submit answers. Lawyers of other companies adopted his statement.

Director Olin Culberson of the oil division said the commission will take up with different companies specific brackets of data and subject-matter to be dealt with when the hearing is resumed.

Standish Reconditioning

Standish Pipe Line Co. is reconditioning a portion of its system between Thrall, Kans., and Kansas City, Kans., to provide for a full 8-inch line. Additional pumping equipment is being installed to increase capacity of this section to 20,000 bbls. daily, necessary due to expansion of sales and increased crude requirements of the Kansas City refinery, which is being supplied from both western Kansas and Oklahoma.

Kansas Pipe Line & Gas Co.

WASHINGTON, D. C.—Kansas Pipe Line & Gas Co. has filed a registration statement with the SEC under the Securities Act covering $1,000,000 5 per cent first mortgage sinking fund bonds, Series A, due 1952, with stock purchase warrants attached, and 36,000 shares of common stock, $5 par. Principal underwriters will be Harold E. Wood & Co., Dietz Chamberlain & Co. and Bigelow Webb & Co. Proceeds of the bond sale will be used for reduction of promissory notes.

Welding Contracts

H. C. Price, Inc. announce they have completed electric welding of 32 miles of 8-inch for Gulf Oil Corp. near Carthage, Texas. Latex Construction Co. of Houston was the general contractor.

They also announce they have received a contract from J. F. Pritchard & Co. of Kansas City for electric welding of 59 miles of 8-inch in Kansas for Phillips Petroleum Co.

Caddo Pipe Line Station

The Caddo Pipe Line Corp. is preparing to construct an oil pipe line station on the Louisiana side of the Rodessa field to serve its gathering system there.

Michigan's New Field

MUSKEGON, Mich., Mar. 1.—Daily production of the rapidly developing Buckeye Township oil field, Gladwin County, was boosted over 10,000 bbls. over the week-end by completion of Wicklund Development Co. No. 3 State, NW SW SE section 11-18n-1w, as the largest well in the new field, making 2,000 bbls. a day.

Six other producers were flowing about 8,000 bbls. daily from the Dundee as operators rushed to the field soon expected to equal or exceed the output of the Porter-Yost area, Midland County.

Motion to Quash Indictments Is Filed at Madison by Gulf

MADISON, Wis.—Legitimacy of marketing practices followed by major companies and their contracts with gasoline jobbers were defended in a motion filed on behalf of Gulf Oil Corp. and Gulf Refining Co. to quash indictments returned here by federal grand juries charging violations of the Sherman antitrust act.

The motion to quash, filed by John E. Green, Jr., and Archie D. Gray, Houston, Tex., and W. H. Dougherty and Stanley M. Ryan of Janesville, Wis., as associate counsel, was supported by demurrers and exceptions.

Alleging that the indictment fails to show any conspiracy was formed in the western district of Wisconsin and that if there was any buying conspiracy it was alleged in the indictment itself to have been formed in the East Texas and Mid-Continent field, the motion adds:

"Even if an overt act in the district where prosecution is sought were sufficient to confer jurisdiction, no sufficient overt act is charged," and no overt act whatever, it says, was shown in this district.

The indictment, it is maintained, charges "no offense known to the laws of the United States," and the allegations are insufficient to show a violation of any statute. It fails to show there was any conspiracy or combination "for the purpose of artificially raising or fixing tankcar prices," or that trade or commerce was unduly restrained.

The indictment, it is argued, "does not contain any allegations charging that the defendants undertook by agreement to compel either their wholesale or retail customers to observe fixed retail prices, but, on the contrary, the allegations as a whole show that the prices were not fixed, but varied.

"The indictment does not show that there were any fraudulent or coercive means to be resorted to for the purpose of restraining other dealers and preventing them from exercising their own judgment as to prices.

"The indictment fails to show that jobbers buying gasoline could not buy from whomsoever they chose," or that "the supply of gasoline was engrossed or monopolized, but does show that such was not the case.

"The indictment fails to show that Gulf Oil Corp. and Gulf Refining Co. marketed gasoline or carried on any business transactions in the western district of Wisconsin," or that either was concerned with the sale of gasoline in said district, or entered into any jobber contract or concerned itself with jobber margins fixed by provision of such contracts, or with the wholesale or retail prices in the western district of Wisconsin.

In relation to the "jobber margins" indictment, the pleadings contend it "fails to show any conspiracy or combination to fix and make uniform the amount of margins to be allowed jobbers in the sale of gasoline, but on the contrary that the margins varied from time to time, and it is not shown the margins of profit were unreasonable."

Bonds have been filed guaranteeing appearance of 55 individuals March 3, for arraignment.

David W. Harris, Shreveport, La., general manager, Louisiana Oil, was excused temporarily because of ill health. H. E. Koopman, Bartlesville, Okla., has been dismissed as a defendant and bond has been filed by F. E. Koopman.

Petitions have been filed by Keith Fanshier, petroleum editor, Chicago Journal of Commerce, and Bernard L. Majewski, Chicago, vice president, Deep Rock, asking release from their oath of secrecy.

Preparations for housing defendants are under way in case they go to trial June 1 as now tentatively scheduled. Some, it is understood, plan to bring their families to Madison, and a university fraternity has been asked to lease its chapter house on Lake Mendota.

Defendants who have given bond are L. T. Cramer, Dan Moran and Harry J. Kennedy, Ponca City; Edward Karstedt, Denver; John A. Welch, Shreveport; Jacob France, Baltimore; J. W. Warner, R. O. Audrain, R. W. McDowell, Thomas Fitzgerald, W. G. Skelly, James Nagle, O. J. Tuttle, Arthur V. Bourque, Ira A. Smith, Dewey K. Chamberlain, Edwin B. Reeser, W. S. Merritt, Harry D. Frueauff, and L. B. McCammon, Tulsa; A. M. Hughes, Frank Phillips, Bartlesville, Okla.; W. C. Platt, Cleveland; Allan Jackson, Edward G. Bullock, Edward G. Seubert, Hiram Lewis, Amos Ball, C. B. Wright, Chicago; S. R. G. A. Van der Woude, E. W. Sinclair, R. D. Cottingham, W. S. S. Rodgers, H. W. Dodge, Edward L. Shea, J. W. Carnes, Charles E. Arnott, Charles L. Jones, Noel Robinson, S. E. Brandli and Frank R. Coates, New York; H. T. Ashton, Alexander Frazer, P. E. Lakin and R. D. Ebbert, St. Louis; L. L. Marcell, W. T. Atkins, Kansas City; N. T. Stover and C. L. Fleming, Findlay, O.; Howard A. Coffin, Detroit, and A. D. Maguire, Milwaukee.

Average Station Gasoline Price Advances

The average retail price of regular grade, 68-70 octane gasoline in 50 cities throughout the United States advanced .36 cent during February and on March 1 was 14.46 cents per gallon. This average, which is based on dealer prices in these 50 cities or in some instances on the actual service-station price at points where stations are still company operated, is the highest average since March 1, 1931.

On January 1, 1937, the average composite price was 14.09 cents and on February 1, was 14.10 cents with only a few changes taking place during January. As February opened the prices were advanced throughout southeastern United States. During the remainder of the month the price structure was advanced in all sections of the United States except on the West Coast where the prices remained stationary. The March 1, 1937, price is .24 cent higher than the average of a year ago.

Drilling in Alabama

Work was reported started at an 8,000-foot test on the Hatchetigbee anticline, Choctaw County, southwest Alabama, Joe Modisett and others No. 1 McCorvey, SW cor. section 20-9n-2w. Phillips Petroleum Co. has a large spread of acreage in the vicinity, but will not be associated in drilling the well. Rig was being moved in.

Another wildcat, Rice Oil & Gas Co. No. 2 Oakley, section 9-3n-29e, Houston County, southeast Alabama, was shut down at 4,975 feet but operators reported they would resume drilling. Arkansas Fuel Oil Co. No. 1 McClure, SE NE section 4-5n-2w, Washington County wildcat, was dry and abandoned at 6,112 feet.

Texas House Votes 6 Per Cent Tax

AUSTIN, Tex., March 1.—Failing on a tie vote to engross the Reed bill levying a flat 10 cents per bbl. tax on crude, the Texas house adopted an amendment fixing the levy at 6 cents per bbl.

Big Siliceous Lime Well

An estimated 2,500-bbl. well was completed Tuesday in the Key pool, southern Elk County, Kansas, by Diller Oil & Gas Corp. at No. 4 Key, SE SE NE section 26-31-10. This is the fourth successive Siliceous lime well completed in the Key pool, and is one of the largest Siliceous producers in southeastern Kansas. No production test was made but potential is based on rapid rate of fill-up. Siliceous was topped at 2,296 feet. The drill stopped at exactly 6 inches in the pay and the hole began filling up. Tools are being moved to Diller No. 2 Cochran, NW NW SW section 25-31-10, next Siliceous test in the pool.

Southwestern Oklahoma Lease Sale

Leases on 110 tracts in southwestern Oklahoma, 15,066 acres, were sold at the Kiowa Agency in Anadarko, Okla. A total bonus of $58,226.38, plus advance rentals of $18,832.51, was paid. Phillips Petroleum Co. paid the top bonus of $10 an acre for one tract of 125 acres and another of 159 acres, in Comanche County. Indian Territory Illuminating Oil Co. was the largest buyer, taking 53 tracts in Caddo, Comanche and Kiowa Counties. Other buyers were Gulf Oil Corp., Texas Co., Pure Oil Co., Skelly Oil Co., Mid-Continent Petroleum Corp. and Magnolia Petroleum Co.

Wildcatting in Mississippi

Another wildcat has been started in southwest Mississippi, on a 30,000-acre block in Amite County. J. P. Wemple, trustee, for North Central Texas Oil Co. of Shreveport, La., was reported rigging up No. 1 Southern Forest Land Co., SW cor. section 29-4n-2e, to drill to the 5,200-foot level.

Texas Allowable Increased By 69,036 Barrels Daily

AUSTIN, Tex.—Allowable production for Texas March 1 has been set by the Railroad Commission at 1,398,514 bbls., an increase of 69,036 bbls. over February and 33,320 bbls. above allowable production February 19. The Bureau of Mines estimate is 1,256,000 bbls. daily, or 142,514 under the Texas March 1 allowable. As the Texas allowable increases during the month from 40,000 to 50,000 bbls. due to special increases and new wells, by the end of the month it is expected to be from 180,000 to 190,000 bbls. above the bureau estimates. Market demand for Texas, based on nominations of purchasing companies, is 1,565,231 bbls. 166,717 bbls. over allowable.

TEXAS ALLOWABLE PRODUCTION BY DISTRICTS

	Allowable		
District—	March 1	Feb. 1	Feb. 19
Southwest Texas	227,486	215,611	224,429
Gulf Coast	207,023	191,949	197,005
*East Central Texas	74,479	66,930	72,395
Rodessa	39,400	34,475	38,344
East Texas field	453,000	451,000	452,188
West Central Texas	64,428	62,310	63,933
West Texas	188,463	168,968	176,562
North Texas	68,625	64,400	65,525
Panhandle	75,610	73,835	74,813
Total	1,398,514	1,329,478	1,365,194

*Except Rodessa and East Texas field.

THE MARKETS*

CRUDE OIL: ***New month starts with highest domestic production in prospect and authorized by state regulatory bodies. Demand continues firm with active competition for connections in practically all the active drilling areas. No changes in posted schedules.***

REFINERY: ***Gasoline market not active in most areas with no important changes in prices. Low octane material appears to be weakest product. Overhead distillates of all grades more readily available and prices lower at eastern points. Residual fuel oil continues strong.***

TANK-WAGON AND SERVICE STATION: ***Gasoline service station prices higher in the Rocky Mountain states and lower in Oklahoma. Kerosene prices higher in Nebraska. Scattered price cutting in several states.***

FINANCIAL: ***Common stocks lower in line with trend of general market. Average of 30 representative stocks for week ending February 27: High. 43.39; low. 41.49; close. 42.37. Week ending February 20: High, 44.03; low. 42.44; close. 43.17.***

Detailed information in Market Section.

WHAT OIL MEN ASKED FOR

TWO PORTLAND CEMENTS —BOTH MADE FOR OIL WELLS

OIL-WELL work presents special problems which all-purpose cements were not designed to meet. Recognizing this fact, more than a decade ago Lone Star Cement Research Laboratories perfected 'Incor' 24-Hour Cement, which sets normally but hardens in one-fifth the usual time—the high early strength cement with an outstanding record of successful results in oil-well work.

Meeting Oil-Well Needs

Then, closely following oil-field developments, Lone Star met the newer problems presented as wells became deeper and hotter. And 'Starcor' Cement was perfected.

Both 'Starcor' and 'Incor' are true Portland cements, in all that the term implies. No admixtures or adulterants are used or needed. By carefully perfected processing methods, the needed special properties are built into the cement itself.

Thus, both 'Starcor' and 'Incor' pump easily in 15- or 16-lb. slurries. Stay gel-like to resist mud contamination. Provide a stronger, denser shut off.

Controlled Setting Time

And both cements have controlled setting time—an in-built safety factor to allow the slurry to get to the bottom of the well, with ample leeway for unforeseen contingencies. 'Incor' is "timed" for cementing wells of medium depth, while 'Starcor' is timed to set slowly in even the deepest wells, in the presence of high temperatures.

Then, while timed to set normally, both 'Starcor' and 'Incor' harden rapidly and thoroughly, once they are in place, and provide quick protection against gas agitation and ground-water seepage. You can drill out in 1 to 2 days with 'Incor'—2 to 3 days with 'Starcor'.

And both cements resist sulphate-water action, 'Starcor' being specially designed to provide extra protection where these conditions are serious.

Record of Dependability

Here, then, are two oil-well cements, made just as oil men wanted them made. Backed by Lone Star's 37-year record for unvarying quality and uniformity. Use 'Starcor'* or 'Incor'* on your next job. Both are stocked by Lone Star Dealers, for immediate service. Lone Star Cement Corporation, Dallas—Houston. Cable address: Cementus, Dallas.

*Reg. U. S. Pat. Off.

LONE STAR CEMENT CORPORATION

'INCOR' 24-HOUR CEMENT • 'STARCOR' CEMENT

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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A Word of Warning

There is a good deal more at stake in this ignoring of the Bureau of Mines recommendations in state allowables than the state regulatory bodies appear to think or the industry at large realizes.

There is no question the bureau's estimates have been too low and that the method of estimating demand is not entirely satisfactory during periods of rapidly advancing consumption as in the past two years. That situation will have to be corrected.

But the state commissions cannot run off with the idea that they are a law unto themselves. Chairman Thompson announces he will not call another meeting of the Interstate Oil Compact Commission until the Bureau of Mines completes its survey of crude oil stocks. As the bureau stopped recommending reductions in crude stocks several months ago that cannot be used to divert attention from the states ignoring the recommendations on production.

These recommendations by the Bureau of Mines have been set up as a yardstick for the industry in its effort to bring about more stable conditions, but there is danger of forgetting the past with every state setting out to suit itself without regard to the rest of the industry with the all too familiar result.

For March the principal producing states have ignored the recommendations of the Bureau of Mines so that the aggregate allowables are 200,000 barrels daily in excess of the federal estimates.

These state allowables are based largely on nominations by purchasers and it is apparent, in many instances, the nominations do not solely represent actual demand plus a seasonable addition to storage. Buyers figure that any crude they can get now will be worth more, either in the form of crude or finished products. They ask for 100 barrels expecting to get 90.

The danger in this whole situation of ignoring the Bureau of Mines recommendations and each state playing a lone hand is in the effect it may have on the proposed extension of the Interstate Compact law now before congress.

It must not be forgotten that this compact constitutes the only legal authority permitting the states to act together. The approval of the compact by the federal administration rested largely on cooperation with the Bureau of Mines. If the states persist in ignoring the bureau's recommendations, getting more out of line every month, there may be an unfortunate reaction at Washington.

Are you making it?

Mid-Continent refiners in one month last fall made 53.9 barrels of gasoline from every 100 barrels of crude they ran

An unusual yield—but significant

Average gasoline yields are climbing right along toward that figure

Average octane rating of regular grade gasoline sold the country over last year was close to 70—and it's going up

What do these facts mean to you?

They mean you ought to put in Dubbs-cracking if you are making lesser yields of lower octane gasoline

Dubbscracking makes the highest yield of the best anti-knock gasoline from any charging stock—and at lowest cost, royalty and all

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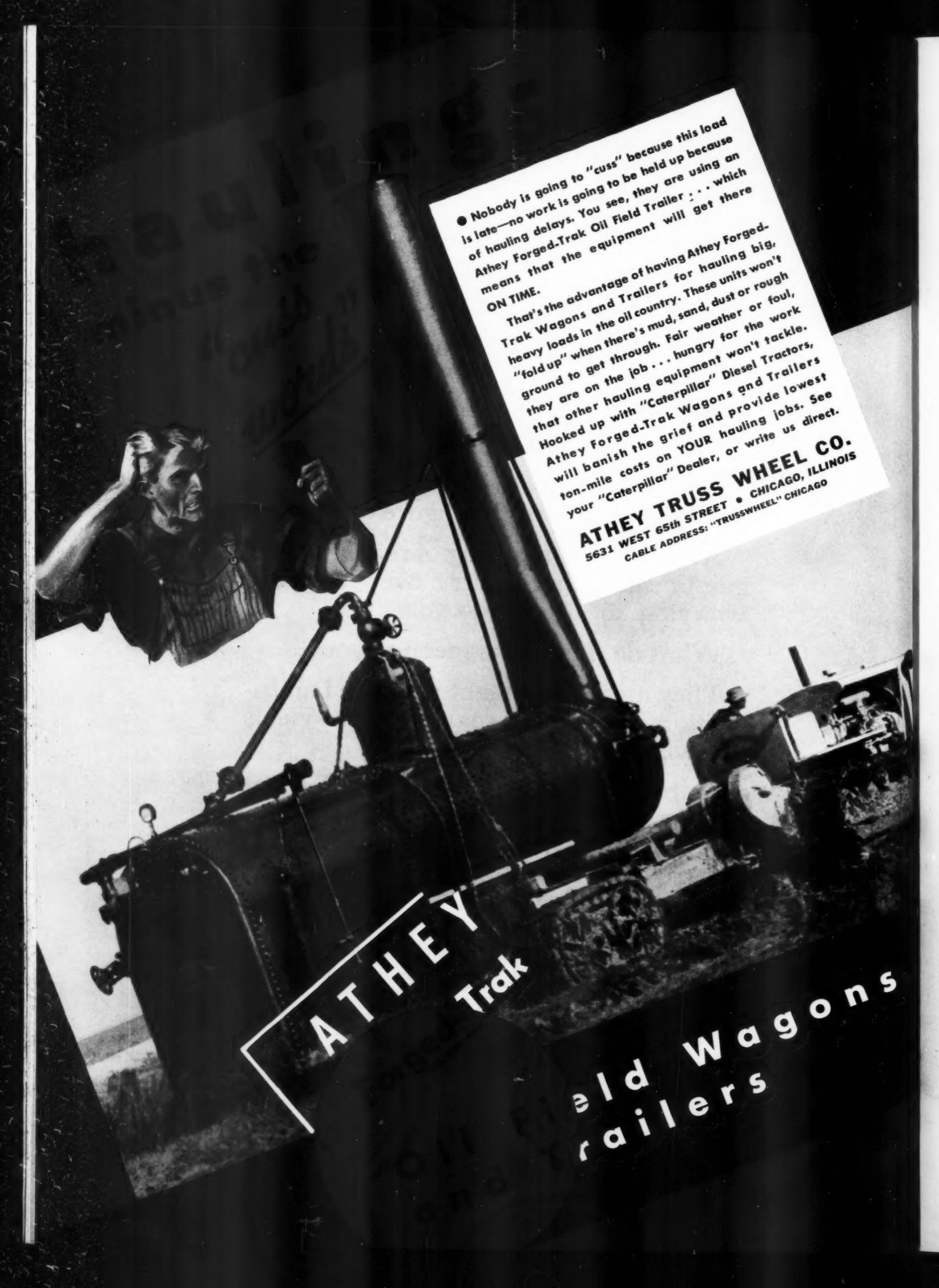
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor


● Nobody is going to "cuss" because this load is late—no work is going to be held up because of hauling delays. You see, they are using an Athey Forged-Trak Oil Field Trailer . . . which means that the equipment will get there ON TIME.
That's the advantage of having Athey Forged-Trak Wagons and Trailers for hauling big, heavy loads in the oil country. These units won't "fold up" when there's mud, sand, dust or rough ground to get through. Fair weather or foul, they are on the job . . . hungry for the work that other hauling equipment won't tackle. Hooked up with "Caterpillar" Diesel Tractors, Athey Forged-Trak Wagons and Trailers will banish the grief and provide lowest ton-mile costs on YOUR hauling jobs. See your "Caterpillar" Dealer, or write us direct.
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Oil News from Foreign Lands

Polish Oil Industry Needs Help

Government assistance for the Polish oil industry is being advocated by officials to reverse the trend of declining production and to forestall the time at which imports will be required to supply part of the internal demand. Two possible methods of assisting the industry to launch an intensified drilling program are being considered. One means of aiding the industry to finance the required drilling program would be direct payment of part of the costs of wildcat exploration. Another means considered is a material reduction in taxes on the industry which would provide the same results as direct aid, although it would be confined to existing producing companies.

By leaving taxes on petroleum unchanged and supplying direct assistance in drilling it probably would be possible to attract new companies and individuals not at present interested in Poland's oil industry.

Natural declines in production from Poland's fields is nearing the point at which imports will be required to meet internal consumption. Semiofficial figures place Poland's crude production for 1936 at 3,596,390 bbls., compared to 3,603,320 bbls. in 1935. While internal consumption increased slightly in 1936, demand did not increase by as large a percentage as in most other countries. Poland's refining industry processed an exportable surplus of 770,000 bbls. in 1936, but the slight margin is considered well within the danger line. Three years earlier, the surplus refinery production for export amounted to 1,390,000 bbls.

Kerosene, the chief petroleum product from a standpoint of Poland's consumption, is no longer produced in sufficient quantity to supply the demand if it should return to 1929 levels. The country produced 1,022,000 bbls. of kerosene last year and consumption was 896,000 bbls. However, in 1929 Poland consumed 1,076,000 bbls. of kerosene, considerably above 1936 production.

Fear a Government Strangle Hold

Despite President Cardenas' assurance that plans for complete nationalization of "Petromex" involve no danger to legitimately acquired interests of foreign companies in Mexico, a majority of oil men consider the move another step toward ultimate expulsion or strangulation of private petroleum interests in that country.

Enactment of the expropriation law empowering the government to acquire private property for national use under certain terms and conditions, attitude of the government toward private corporations in labor disputes and wholesale cancellation of leases are the outstanding past developments indicating the nationalization trend.

Dissolution of the Petroleum Co. of Mexico, better known as "Petromex" at a special stockholders' meeting March 1 was regarded last week as a mere formality. Reorganization of the company under government auspices is expected to be accomplished with equal rapidity and ease. Theoretically, everything will be decided at the March 1 meeting, but inasmuch as the government controls 51 per cent of the stock of the existing company, the decisions are in reality being formulated now by the government officers concerned. Experts of the finance and national economy departments worked all last week on details of the dissolution plan submitted to stockholders.

Reorganization of Petromex as a 100 per cent government project is expected to be accomplished by decree of President Lazaro Cardenas who was given authority to so legislate by the last session of congress until it reconvenes in September.

Following the announcement of plans for reorganizing the company issued in Mexico City last week, President Cardenas attempted to give some assurance to private investors in a cable to London. In the message, President Cardenas is said to have stated that the new petroleum organization is intended to stimulate the development of the petroleum industry and will not affect legitimately acquired interests of foreign companies. In some quarters this was construed to mean that the new organization, to be known as the National Petroleum Co. of Mexico, will be limited in capital and thus restrict the scope of its activities. Some hold that it will be even more desirable for foreign, private companies to operate in Mexico under a royalty agreement with the national company than under existing conditions. It is pointed out that such an operating system may function to minimize labor difficulties and will probably have a tendency to convert government support from the side of labor to that of the corporations.

It is reported that projected reorganization provides for all new oil leases in Mexico to be granted originally to the government corporation. Status of private, foreign corporations in the future depends to a large measure on how the National Petroleum Co. elects to operate after acquiring the original leases. Existing leases held by English, Dutch and U. S. oil companies will be assigned to the National Oil Co. of Mexico when they expire, according to present known plans.

Meanwhile, negotiations continue between representatives of oil labor syndicates and private corporations over the contract law covering all Mexican petroleum workers. Information from Mexico City, however, indicates that very little progress is being made at the daily conferences.

French Taxing System

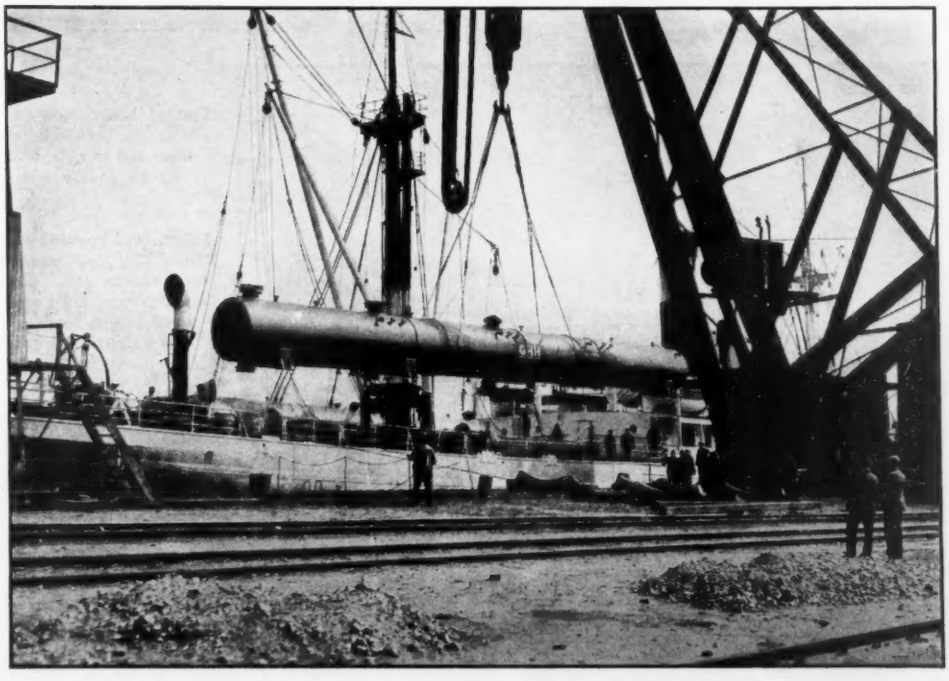
Although the French system of taxing petroleum products has been simplified, there is very little change in the total levies. Much of the red tape previously applicable to lubricating oils dependent on quality and packing has been removed and a uniform rate now applies. Previously subjected to a large number of different taxes imposed at one time or another, the petroleum industry has been particularly benefited in the simplification process. Petroleum duties now fall into three main divisions, customs, O.N.C.O. tax (contribution to the maintenance of the Office Nationale des Combustibles Liquides) and the tax on white products only. Internal production from Pechelbronn, shale oil and synthetic gasoline has been exempt from all duties and taxes.

The tax reform measures contain one provision of particular interest to the oil industry. In the future importers, refiners and distributors will have a prior claim, subject to government claims, on the property of debtors in respect of the recovery of all duties and taxes included in the selling price and paid in advance by traders. In the past the first importers of petroleum had to assume the entire credit risk for payment of taxes.

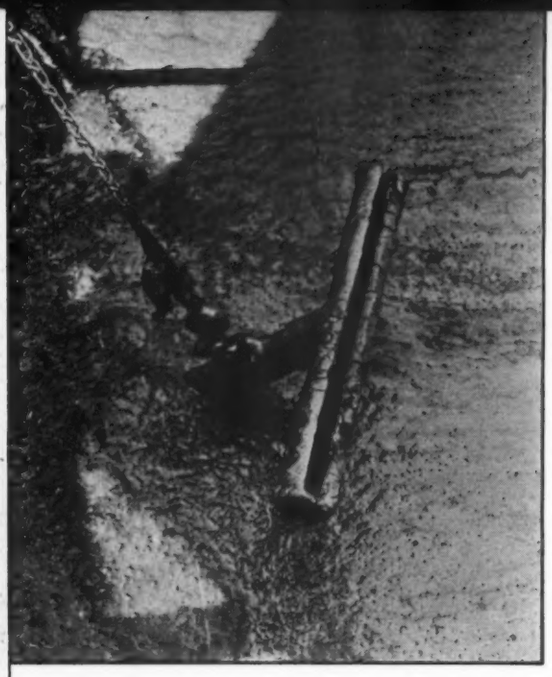
The sum of the new taxation for imported finished products and those produced from domestic refineries is as follows:

Product—	Francs per hectolitre—Imported finished	Francs per hectolitre—Domestic finished
Motor fuel (tourisme)	148.30	137.05
Motor fuel (poids Lourds)	121.20	109.95
White spirit	94.20	92.95
Kerosene	78.25	66.95
Other refined oils	94.80	83.55
	Francs per 100 kilos—	
Gas oil	64.00	64.00
Fuel oil	325.00	325.00
Lubricants	116.90	76.40
Vaseline	231.50	143.80
Paraffin wax	259.60	220.50

The revised rates of taxation leave approximately unchanged the margin of higher duty paid on imported finished products over those produced within the country. It was through this system that France forced construction of refineries within its borders and compelled major foreign companies to operate an extensive refining industry in the country. Furthermore, the protective tariff system also induced French capital to invest in national refining enterprises.



Handling one of the two extractors used in construction of the Raffineria di Napoli, Naples, Italy, clearsol plant built in 1936, by a subsidiary of Socony-Vacuum Oil Co. Ltd.



Long Usage Proves of Centralized Mud

By T. P. SANDERS

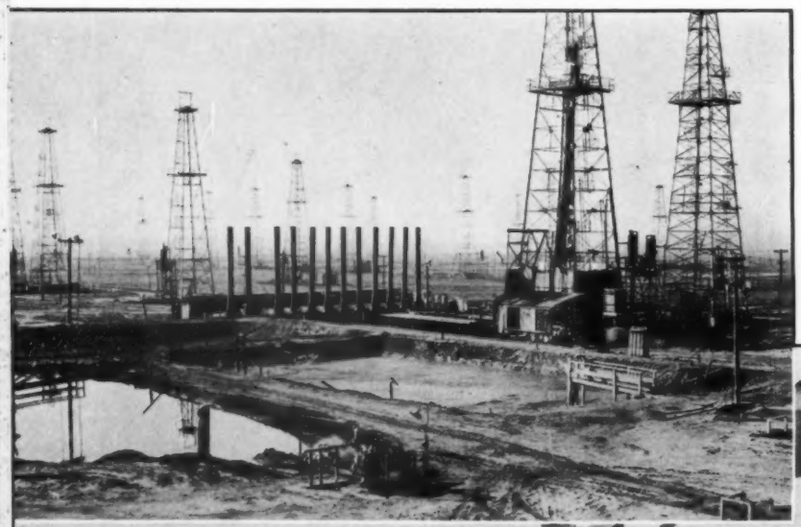
Device used to remove the water from the top of the mud in the storage tanks at the Dominguez plant

It is practically always impossible to place any definite monetary value on improvements brought about in the drilling field. The most exacting of accounting systems cannot establish the amount saved by the use of new drilling equipment or practices. Each year deeper drilling is accomplished, and the improvements which make deep wells more easily drilled than were much shallower wells a few years ago are so numerous that it is impossible to determine what part of the benefits resulted from the use of any one feature. For example, in reducing fishing trouble, straighter holes, control of drilling fluid, and better equipment, have played major parts, but since no figures can be compiled to show the relative value of each, the opinions of operators must be accepted as to the value of each improvement. This is the case with central mud-treating plants used in several fields of California, some as long as six or eight years. A typical plant is Union Oil Co.'s mud-reconditioning plant in the Dominguez field, where this company has experienced no serious trouble from stuck drill-pipe during the six years that the plant has been in operation.

A good central mud-plant should provide better and cheaper drilling fluid than would otherwise be used; make available adequate supplies of mud, water and oil for immediate use at the drilling well; prevent waste of mud, save the cost of digging and filling in mud pits at each location. It should be as flexible in operation as possible in order to take care of unusual conditions arising in the drilling wells. Flexibility calls for quite a few storage tanks and pits, with many connecting pipe lines provided with pumps and a sufficient number of valves, so that the various drilling fluids on hand can be easily handled. With the system used in Dominguez field no treating whatsoever is done at the wells. Returns from the well are led by means of a wooden conduit to a small flat suction tank which holds the only reserves maintained at the well. With this equipment a supply of mud is circulated until it becomes contaminated with sand, gas cut, diluted with water, or otherwise deteriorated to an extent which makes it advisable to change mud.

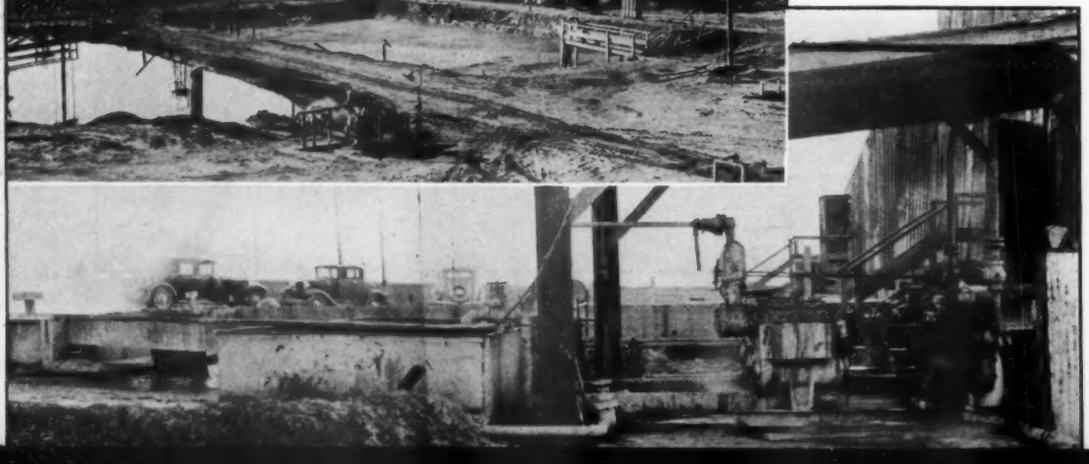
The plant is then notified by telephone as to the depth and size of hole, so that the attendant can calculate the quantity of fluid required for a complete change. A 4-inch line from the plant ties into the suction of one of the mud pumps, and supplies the new mud to this pump when its suction is cut off from the tank. This pump is used to force the fluid into the hole while the second mud-pump picks up the returns and pumps them through another 4-inch line to the plant for reconditioning. The plant delivers enough mud for a complete change, and this mud is circulated until the next change is required.

In most California fields the upper strata are made up largely of sand. In drilling through this section the mud is generally changed about once every 24 hours, and the sand content is generally about 12 per cent when the change is made. Plant treatment reduces the content to 1 or 2 per cent, most of which is "flour" sand. For each well drilled, between 20,000 and 30,000 bbls. of mud are treated and stored, one for drilling the non-productive strata, the other for drilling productive zones and adjacent strata. The two varieties are kept separate. Mud used for drilling the productive zones is made up largely of slough mud, which will form a thin impervious cake on the walls of the hole, while native clay is generally the chief ingredient of the mud used in drilling the upper zones.



Central boiler plant with mud pits in the foreground and deep drilling test to right of boilers is shown in the left view

Below, hook-up used at well by Union Oil Co., showing mud-duct, suction tank, pump, and mud line from plant welded into the pump's suction line



When mud is pumped from a well to the plant, it first goes into one of several pits, depending on what grade of mud it is and whether or not it contains oil, gas or cement. Clean mud is pumped into a pit containing mud of its kind, where it is mixed up with mud jets. Then it is allowed to settle and the free water is skimmed off of the top. A 2,000-bbl. tank is provided for storing each of the two kinds of mud after treatment. When mud is taken from one of these storage tanks, the tank is filled again by taking mud of

Success Plants

General view of Dominguez mud and oil-treating pits with oil heating and storage tanks at left, and central boiler plant in right foreground

Another Sanders article on California production practices. The economies realized through use of centralized mud-treating plants have resulted in many California operators adopting this practice

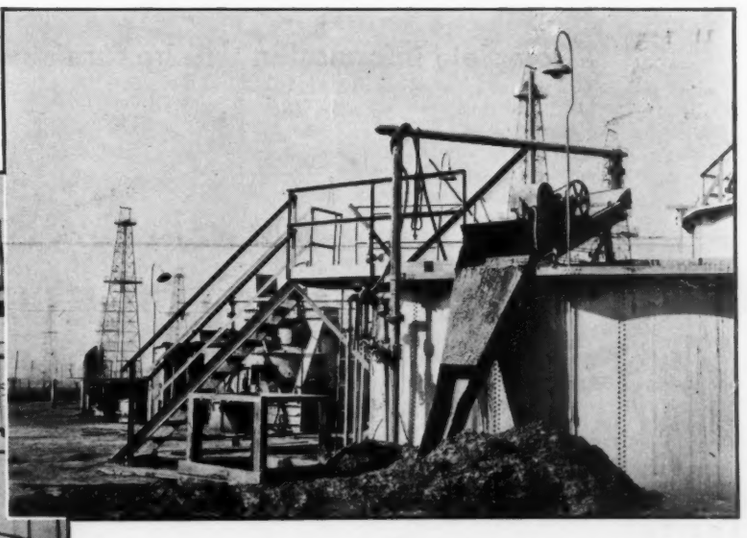
the same kind from one of the receiving pits, and passing it through the treating plant to this tank. First, the mud goes to the plant's receiving tank where it passes through a vibrating screen which removes the large sand grains and shale. From the receiving tank the mud goes to the centrifugal separator where practically all of the sand is removed along with about 10 per cent mud. The good mud overflows from the centrifuge and is pumped to the proper storage tank. Since the removal of sand thins the mud considerably, water must be skimmed off of the mud in the storage tank before the mud is pumped into a drilling well.

If a mud is brought to the plant which is gas or oil cut, or cement contaminated, it must undergo treatment in auxiliary pits before it can be pumped into the receiving pit for either of the two grades of drilling mud. To remove gas, long settling, dilution, and some circulating are often necessary. Oil is skimmed off of the top. Experimental work is still in progress concerning treatment of cement-contaminated mud. Cement has the effect of destroying the body of the mud. Plans have been introduced to treat all new mud brought to the plant before it is used. It has been found that slough mud often contains as much as 40 per cent sand. While this is practically all silt, its presence is detrimental, especially in that it greatly increases wear on the pumps. One of the most noticeable results of mud treatment as carried on in this plant has been the reduction of pump wear. This has represented a considerable saving in parts, labor and down-time during the drilling of the many wells completed by the Union Oil Co., which operates its own tools, in this field. Since its construction, the plant has been used for all wells drilled by this company in the Dominguez field. Operators believe that it has speeded up drilling by keeping the hole free from sand, which might otherwise settle back from the mud while drilling is in progress. Supposedly, the smaller the sand content of the mud, the more efficient it is in bringing cuttings to the surface. Also, in case of trouble there is little sand to settle from the mud to make a serious fishing job or cause the hole to be lost.

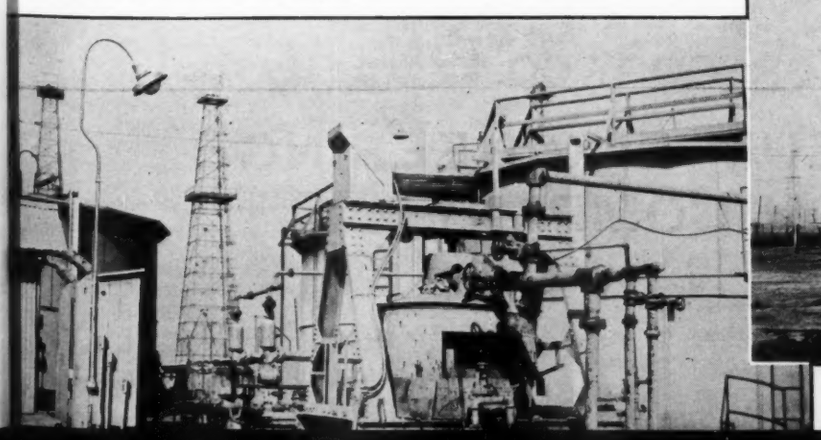
One deep-well drilling at present sometimes experiences stuck drill pipe due to caving. When this occurs heavy dead oil kept in storage at the plant is used to replace the drilling mud, which helps free the pipe, and further trouble is avoided. Water also is kept on hand at the plant for immediate delivery to the wells. The dead oil is obtained from an oil-water separation plant which is operated in conjunction with the mud-treating plant. Salt water from the wells carrying emulsified oil is pumped to this plant along with tank bottoms, water and oil removed from cellars, and other wastes from the leases. Heat and settling are used to separate the water from the oil, and the oil not required in drilling is shipped from the field. The water is freed from oil by being drained from the bottoms of a series of pits and is piped to a nearby iodine plant, since it is fairly rich in this element. The only waste from the mud-treating plant is sand and a small quantity of accompanying mud. This is disposed of at a nearby discarded brick-clay pit. Steam to operate the reciprocating pumps is furnished by a central steam generating plant consisting of 12 insulated boilers.

Central mud-plants of somewhat similar design are used by the Union Oil Co. at Santa Fe Springs and at Kettleman Hills. The Tide Water Associated Oil Co. (Associated Division) also operates a central mud-treating plant in the Ventura Avenue field, where the rugged terrain makes the installation of lines to and from the wells more difficult. Since all California central mud-treating plants are operated by companies who do their own drilling, it is probable that organizations of this kind are necessary to derive benefits from such an investment.

Mud receiving tank with vibrating screen mounted on top through which the mud passes before entering the tank



View of centrifugal de-sanding machine at Union Oil Co.'s Dominguez mud-treating plant



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Present Trends and Practices in Well Completions

By A. W. WALKER
Stanolind Oil & Gas Co.

Early methods of completing wells depended largely upon the type of drilling employed. When cable tools were used is was customary to set the pipe on top of the pay and then drill in the well. In some cases cores were taken, but this was not common practice. When rotary drilling was employed, it was customary to pick up the top of the sand by examining cuttings or cores, and then to drill the well to the desired depth by coring and reaming. The wells were sometimes drilled to predetermined pay penetrations in proved fields. It was also common to set pipe on the top of the sand, using the rotary determined casing points, and then complete the well with cable tools. In the latter case the rotary drilled well results were the same as though the well had been drilled with cable tools.

Either of these methods gave relatively correct information, i.e.: Top of the pay; lithologic or other changes in formation; and, within certain limits, the nature of the pay zones such as fluid content and productivity. However, the information thus obtained could hardly be called sufficiently accurate for close control or analysis. For this reason new and improved methods of completing wells have recently been developed, and it is the purpose of this paper to discuss briefly these developments and their application, especially as they affect office engineers and geologists who are charged with compiling and correlating well and reservoir data.

A.P.I.—Before production division of the Mid-Continent district, American Petroleum Institute, Tulsa, February 25-26.

Many changes were developed to improve the condition of the well for producing and drainage, as well as to obtain precise data required by production men for their various studies. The advent of proration was a decided spur in this direction, for its ideal application requires a detailed and complete study of the nature of the reservoirs, the relative reserves, and their bearing upon allocations. Much of the required data depends entirely upon well completion reports, which in many early records were lacking in detail. There have also been numerous legal cases in which studies of reservoirs and their reserves have been vital factors.

One of the more important reasons for improvement is that proration has made impractical to a great extent most of the older methods of valuation, and comparisons of operations. The only one of the older evaluation methods which can still be applied with reasonable accuracy is the volumetric method, which depends entirely upon well completion records, and, therefore, places much emphasis on the securing of this information.

Any investment as large as that required for a well must be protected as far as possible. One of the best ways of doing this is by completing wells in such a manner that they will be in condition to drain thoroughly the available reserves. In order that this may be done, the following conditions must be fulfilled:

1. The sand face must be clean and free of any deposits which would prevent the free flow of fluid into the well cavity.

2. The well cavity must be of sufficient diameter, so that there will not be any undue resistance to flow of fluid to the well.

3. The well must be completed so that the period of water or gas cap encroachment will be deferred as long as possible.

4. The various productive zones must be so protected that the reserves of the well will not be jeopardized due either to a "thief sand" (gas or dry), or water intrusion through one sand before the others are depleted.

Complete knowledge of the reservoir is necessary to obtain the above conditions, and all such data should be incorporated in the permanent record of the well. These data may be divided into two general classes: First, that required for the physical completion of the well and for use by the field superintendent, geologist, or engineer; and second, that information required by the office forces for planning development and evaluating the properties.

The data most commonly required and used by the field men include: The top of the pay zone, or the actual top of the pay; the nature and extent of any free gas zones; the location of the bottom of the pay; and the current water level. Any possible pays other than that being produced should be recorded for future exploitation. Finally, a record of the exact sub-surface conditions and equipment must be kept and be available for use on any future work-overs.

In addition, the engineering or geological staffs require further information to aid in their particular studies. Much of the more important and necessary data, such as sand porosity, saturation and permeability, are obtainable only by analysis of cores. These values, in conjunction with the gross and net sand thicknesses, are the basis of the volumetric method of calculating reserves. Detailed data on the gas cap and oil-water level must be available in order that the type of reservoir control or operation may be studied and estimated, although in this respect there are many other factors which, as yet, have not been definitely classified according to relative importance, cause or effect. The matter of control is probably as important, or more so than the actual reserves underlying the lease, since the actual recovery of leases under proration depends upon the control of the reservoir as well as upon the original reserves of oil in place.

A. W. WALKER

METHODS

The more important improvements, and some of those which are just beginning to be used, are explained below. For improved conditions of the well upon completion:

Pressure Drilling with Oil as Drilling Fluid—This method has been fully explained by several published papers. There are many advantages to this system and some disadvantages. There is one point that should be mentioned in conjunction with the completion data obtained by this method, which as yet has not been discussed. In the published, and other available data it is sometimes observed that within any single pay zone the productivity reaches a maximum very near the top of the zone and then declines. This can be interpreted as representing a condition of optimum potential due to the energy initially released in the associated gas, rather than as a reflection of the reserves. This is necessarily true because all other data may indicate that the sand is equally well saturated at the points of lower potential. Where this relationship is found, it should be given due consideration in the completion of the well. If it is desired to obtain maximum potential with natural flow, full penetration should not be taken, but if it is desired to obtain the highest potential with artificial flow and the greatest ultimate recovery, it, no doubt, will be necessary to take full penetration and case off the upper or gaseous part of the pay.

Reverse Circulation—This system, but recently introduced, employs circulation of the drilling fluid in the reverse direction to the conventional. Any type of drilling fluid, from regular mud to gas-oil mixtures, can be used with this method. Since the necessary equipment is simple and quite portable, wells can be drilled in by this method using gas-oil mixtures, giving most of the advantages of the standard pressure drilling equipment, and eliminating the disadvantage of excessive increases in cost. The more important advantages claimed are:

1. Readily portable for drilling in and deepening wells.

2. Low surface working pressures and power requirements.

3. Rapid delivery of cleaner and better cutting samples at the surface.

4. Low bottomhole working pressures, thereby eliminating danger of clogging the sand face, and assuring a clean open sand.

Acidization of Wells—It is now common practice for new wells to be acidized either with or without shooting, to increase the permeability and clean the sand face. No description of this method is necessary, as it is a well established fact that these treatments very materially increase the potentials of the wells.

Casing Completely Through the Productive Zones and Then Selectively Gun-Perforating the Desired Zones—There was considerable favorable

(Continued on Page 38)

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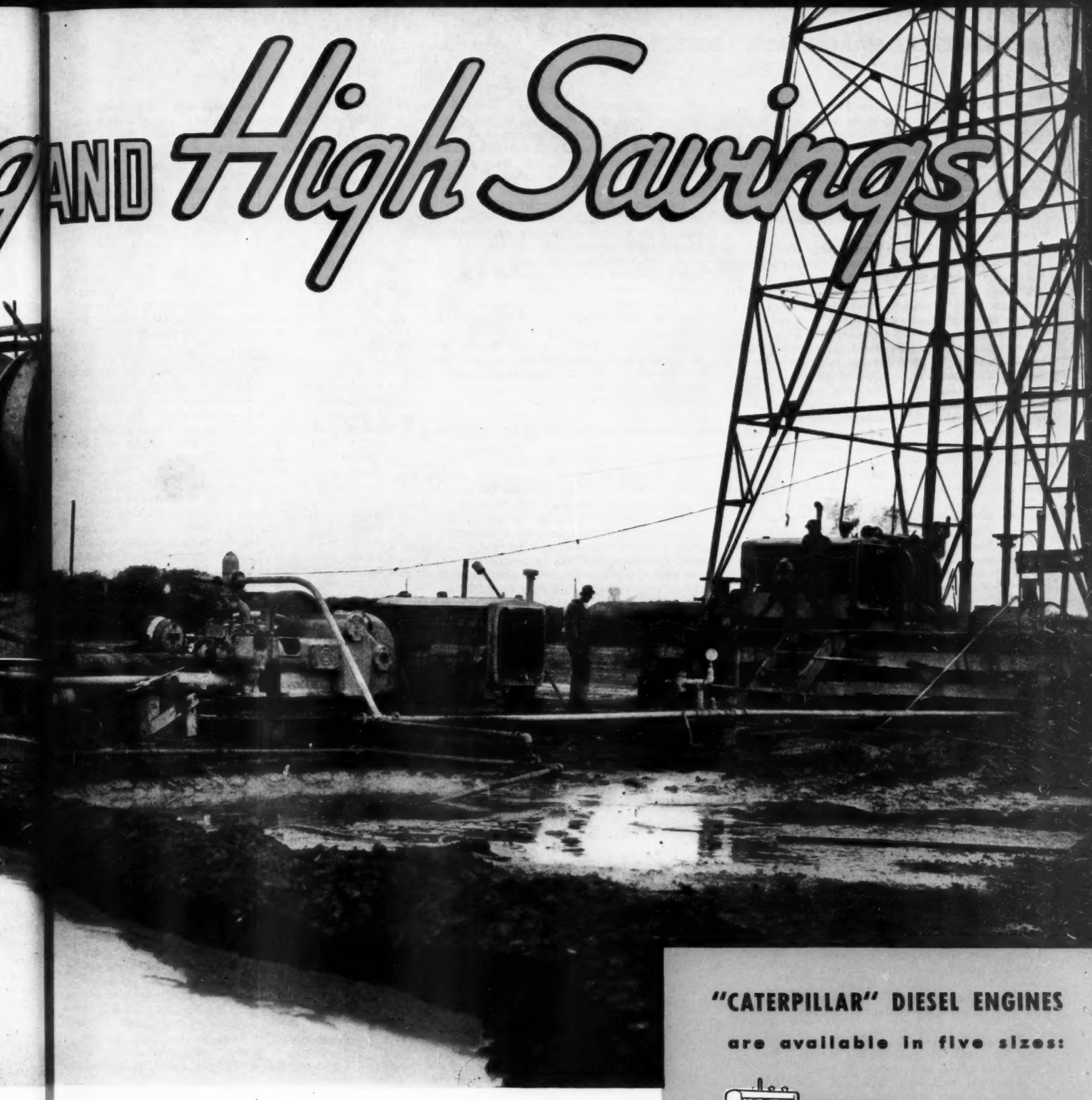

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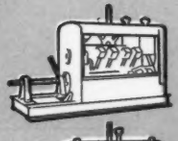
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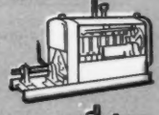
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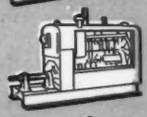
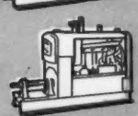
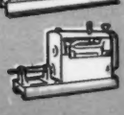

D8800 . . . . 80 HP.


D6600 . . . . 60 HP.


D4400 . . . . 40 HP.

(Continued from Page 35)

thought for this method in the past, but it was not feasible until gun perforation was perfected to the point that exact zones could be selectively perforated independently of all others. This method permits the handling of one pay zone entirely independently of the others, and thereby allows the operator to determine the contents and behavior of any desired zone, and to produce that zone when and as he desires.

Improved or New Drilling Fluids—Better drilling fluids have served many useful purposes, among which is the improved operating condition of wells upon completion. It has been found that a pure colloidal mud will have less penetration of the sand, and can be more easily removed than a non-colloidal mud. Oil-muds, in which oil is used instead of water as the fluid, have been used experimentally in special cases, and may have a wider application in the future. These muds prevent contamination of the sand and cores with water, but require a high proportion of colloids. Some special muds containing definite chemical properties have been used. Prepared lime is on the market for use in cleaning out and drilling in wells. This mud has the desirable property of being entirely removable from the face of the sand by HCl, thereby insuring an unusually clean sand face.

Squeeze Jobs — These are essentially grouting operations, in which undesirable water bearing, or caving horizons are shut off or encased by cement, thus eliminating the cost of expensive casing jobs, and leaving the hole in much better condition than would otherwise be possible if casing were not used.

Improved Core Barrels — There have been steady improvements in the construction of rotary core barrels for the past several years. Non-rotating inner barrels, changes in fluid venting in respect to the inner barrel, and modification of the core retaining mechanisms have been important improvements in the design, and have given better coring results, especially in the Mid-Continent area. The use of better colloidal mud has also increased the percentage recovery in hazardous areas.

All of the above drilling-in methods and aids have made it possible to complete wells in good condition and to obtain better data for field use. The following developments have been very beneficial in that they have been the means of obtaining data that heretofore were not available:

Drill Stem Tests—These tests have very nearly become routine practice in certain areas, in order to locate the producing horizons and test unknown strata. Now, with the use of sub-surface pressure records in conjunction with the tests it is also possible to obtain an estimate of the productivity of the horizon as well as of the content of the pay zone.

Electrical Surveying — Within the past few years this practice has become very wide-spread and useful. By means of electrical well logs, beds and pay horizons are now definitely and closely located and correlated, whereas, before this could not be done. With such information, pipe may be set either to case off or produce the exact zones as desired. In many cases, good pay zones have been detected which otherwise would have been missed entirely. However, it has been noted, when correlating this with other data, such as core analyses, that electrical records (as now developed) should be considered as relative rather than quantitative or exact in respect to fluid content.

Sidewall Samples—This method is not very well adapted to the harder formations of the Mid-Continent, but rather to the softer beds of the Gulf Coast, where it offers a valuable means of checking formation data. When the sampler reaches the desired depth, two cutters are forced against the formation by pump pressure. As the drill-pipe is lowered, the cutters are forced into the sides of the well, and then extracted as the drill-pipe is picked up. The samples are removed at the surface and furnish additional aid for the identification and correlation of formations, especially where it was not possible to obtain satisfactory data as the formation was drilled.

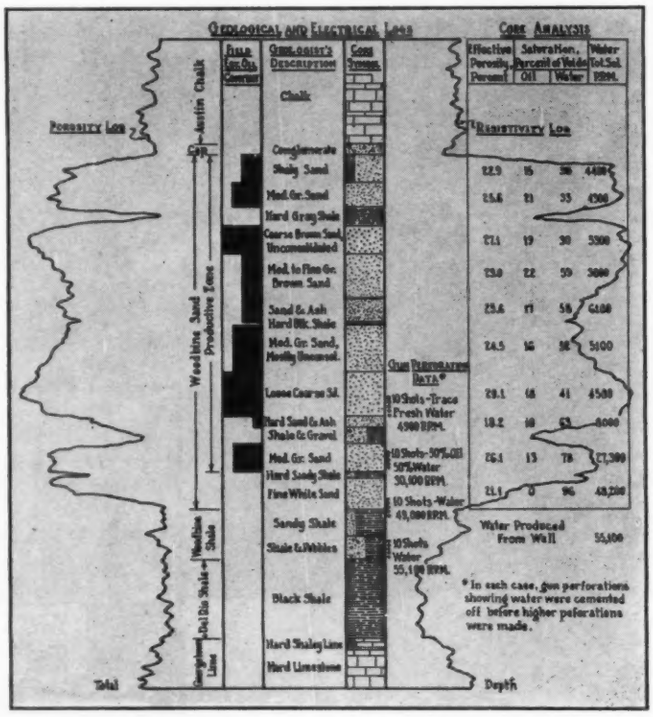
Recording Temperature Records — Devices for recording and logging the temperature changes with depth have recently been introduced. One is the electrical method employed by Schlumberger. The other is a temperature recording bomb which uses a pressure element connected to a bulb containing a volatile liquid which is sensitive to temperature changes. Any variations in vapor pressure are recorded by the element, which is used in conjunction with the regular Amerada recording pressure gauge. This is a new development and all of its possible uses and correlations have not been determined as yet. Probably its greatest present value is the definite location of cement behind casing. It is anticipated that these records will aid in the correlation of beds, and possibly in the determination and location of producing water or gas sands.

TEST DATA

In addition to the foregoing, still further refinements are needed to complete the records and to carry out the various studies required for modern production control and regulation. Much of this extra data are obtained from laboratory analyses. For this purpose it is necessary to obtain cores of the sands as nearly representative of the reservoir as possible. This has resulted in the following improvements in taking cores:

1. Use of high colloidal mud to prevent contamination of cores.

2. Use of oil or oil-mud as drilling fluid to prevent any possibility of water intrusion into cores.



Composite showing stratigraphy and sand characteristics of typical Texas well

3. Use of water soluble chemicals in mud which can be identified to determine the degree of water contamination of cores.

4. Improved technique in the handling and shipping of cores on the surface.

By observing all of these precautions and by careful laboratory analysis, relatively accurate measurements are obtained of the true, or representative: Porosity, oil and water saturation, permeability, and net sand percentage of the producing horizons.

A complete and accurate record of the performance of a new well is sometimes not regarded as important completion data, but it is of real value in any study of a well's record and future life. These tests should include the original well conditions, such as:

Reservoir pressure.

Productivity at various reservoir pressure drops.

Reservoir-pressure build up after shutting well in.

Gas-oil ratios.

Gravity of oil.

Water conditions, if any.

By a comparison of subsequent observations at the well, and the previously mentioned core analyses, it is then possible to predict the future operating conditions and thereby gain a far better working knowlege of the well and reservoir.

CONCLUSIONS

It is not the purpose of this paper to discuss the relative merits of any method of completing wells, but only to describe the methods. However, it is believed that a discussion should be given of the limitations of certain methods, and especially those methods which may or may not be used in conjunction with others. From the foregoing descriptions it is obvious that all of these methods are not applicable or desirable under all conditions. The very nature of some methods make the operation of others almost impossible, or they would provide only an alternate method of obtaining the same results. There are also certain methods which cannot be used in the Mid-Continent area due to the lithologic nature of the formations.

Of all the described methods, side-wall sampling is naturally the least applicable in this area, because the very nature of the equipment requires a relative soft formation. Electrical surveying is not as well adapted for this area as elsewhere. The main difficulty is the proper interpretation of the observations, which is made more difficult by the presence of limes and hard sands. Further studies are being made along this line, which, no doubt, will make more satisfactory results possible in the near future.

When wells are drilled by pressure drilling or reverse circulation, using oil as a drilling fluid, it is, of course, impractical in many cases to take cores except by the use of wire line core barrels and bits. As yet the use of these is not common in the Mid-Continent. It is also impractical to use electrical coring methods where oil fluids have been used in drilling. Thus, whenever gas-oil mixtures are used, and a surface pressure is held on the drilling fluids, the information is limited to showing the breaks in the productive horizons from flow tests, the productive nature of the particular zones, and the geological and lithological data obtainable from the cuttings. Such information is very similar to that obtainable by drilling in wells with cable tools, although it is considerably more accurate and in more detail, with the added advantage that the well is always under positive control.

There are some conditions under which it is almost impossible to recover truly representative cores, such as unconsolidated gravels and cavernous limes or dolomites. In these cases pressure drilling, or cable tool drilling offer about the only source of reliable formation data.

With colloidal mud-laden fluids there is a wider range of possibilities for determining the reservoir conditions. Cores can be taken at any desired and favorable point, and drill-stem tests can be taken wherever the formations are favorable and definite knowledge of the sands' contest is desired. The point at which to take cores, or test the formation, is usually determined by the drillers' log or the geologist's record of the formations as determined by cuttings. Upon completion of the drilling of the well, or at definite intervals, electrical surveys may be made.

(Continued on Page 40)

Truck-Mounted Rotary Drilling Rigs

By C. M. COPELAND
Superintendent, Helmerich & Payne, Inc.

No branch of the oil industry is more competitive than contract drilling. Contractors are forced to adopt every means that can reduce drilling costs. This is particularly true on wells to a depth of 4,000 feet. The elements making up the cost of the drilling operations are: (1) Investment in equipment; (2) depreciation of equipment; (3) trucking to move in; (4) material to rig up; (5) labor to rig up; (6) drilling crew labor; (7) insurance on labor; (8) bits, reamers and cones; (9) repairs to equipment; (10) fuel, and (11) water.

A very efficient rig, which has been developed for drilling to 4,000 feet, is the truck mounted rotary. In assembling this rig a 7½- or 10-ton truck chassis, with 225-inch wheel base, is used. The mud pump, a second motor, and drawworks are all mounted integrally on the truck. The unit transports itself from location to location and furnishes all the power used in drilling. The motors are rated at 112 H. P. and will develop 140 B.H.P. at 2,100 R.P.M.

The mud pump is placed transversely, immediately back of the cab. It is driven by a power take off from the truck motor. The lighting plant is mounted on top of the pump. The second motor, parallel to and beside the mud-pump, drives the drawworks and rotary turn-table. By means of a gear box, the motors can be compounded for handling the drill-stem. Either motor can operate all equipment somewhat slowly in an emergency. The drawworks are mounted on the rear end of the truck.

In rigging up, the unit is backed up to the derrick and the rear end of the truck frame is set on the derrick floor. The truck frame is leveled up with blocking placed on timbers, so that all weight is taken off the truck springs to give the unit a solid foundation while drilling. A steel header is placed over the drawworks and turnbuckled to the derrick sills or foundation. The unit is then ready to furnish power for hoisting the crown blocks and other rigging up operations. With favorable weather a rig can be ready to spud 24 hours after arriving at the location.

Since the unit is comparatively short and compact a small amount of material is required for boarding up. A platform 6 feet wide and 20 feet long down each side is sufficient flooring. Two side walls 8 feet high and 20 feet long, house in the sides; a 20 by 20 roof is needed. The crew required is: 1 driller, 1 derrick man and 2 floor men, on tour. A mechanic is usually assigned to a rig and is subject to 24 hour call if any trouble develops.

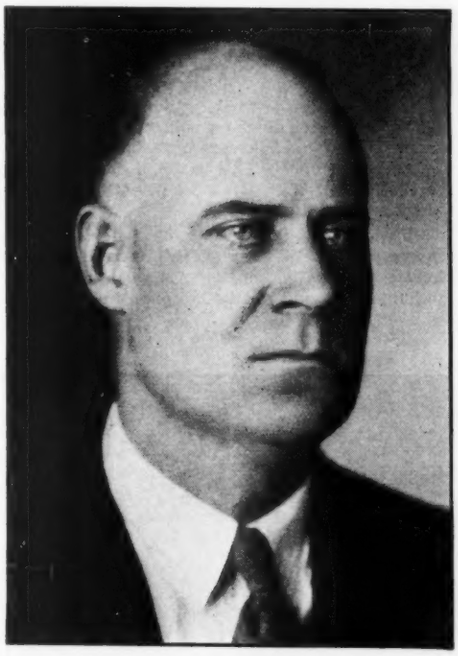
The chief mechanical elements entering into the drilling speed are mud pump capacity and hoisting speed. To a depth of 4,000 feet, using 4-inch drill-pipe, the hoisting speed compares favorably with heavier type rigs. Trip time from drilling reports show the following:

Truck mounted rig 4 hours; diesel rig 3¾ hours; steam rig 3¾ hours.

The truck type rig is at a disadvantage when considering the mud pump. This arises from two causes. First the pump is considerably smaller than pumps for heavier rigs. Second, the pump is mounted on the truck which places it several feet above the level of the circulating pit. This lowers its efficiency quite materially. This can be remedied by using an auxiliary motor driven pump. The pump would also be more efficient if it were placed on skids transversely at the side of the truck. It could be driven by a V-belt drive from under the truck. This would be a very simple hook-up.

***A.P.I.*—Before production division of the Mid-Continent district, American Petroleum Institute, Tulsa, February 25-26.**

There is possibly a slightly higher bit cost with the truck rig than with heavier rigs because of the smaller pump capacity. However, this would be a very difficult figure to secure.



C. M. COPELAND

If properly cared for, the repair costs are approximately the same as for other type rigs. The motor repairs are supplied by standard truck parts, which reduces their cost. The gear parts are quite high, but no higher than the repair cost of other type rigs. One truck rig made a record of 33 wells of an average depth of 3,200 feet before necessitating an overhaul job. The motors had been overhauled once.

The truck rig is designed to use gasoline and is economical in its fuel requirements. However, it does have one serious handicap in the gasoline tax. If this could be eliminated, its gasoline cost per day would be about the same as a light type diesel rig and considerably under steam rigs with gas at a price of 15 cents per 1,000. One very desirable feature about its fuel is that it can be obtained in any locality with no expenditure for pipe lines or special storage.

This rig can be operated on butane. With this type of fuel, there is required in addition, a high-pressure storage tank, and a special carburetor. The fuel cost on butane is less than half that of gasoline. Butane will yield about 10 per cent less torque than gasoline, but the motors have faster pick-up.

The water requirements for the rig itself are only a few gallons a day. This is especially advantageous in wildcat operations. This feature is, of course, shared by diesel type rigs. A well can be drilled if a supply of 150 bbls. per day is available for the mud. Drilling operations can even be carried on with salt water by securing good water for the motors.

COMPARISON OF TYPES

Table 1 gives a comparison between truck type, diesel and steam rigs. The diesel and steam rigs are capable of going to greater depths than the truck mounted rig. However, one truck rig drilled a well from the surface to a depth of 6,004 feet in 71 days.

The shown investment and trucking figures deal only with the power plant, pump, hoisting equipment and lighting plant. Such items as crown-blocks, traveling-blocks, rotary, drill-stem, etc., are not considered because these are common to all types.

There are several skid-type diesel rigs in use. Some of these have the drawworks, rotary drive and one engine unitized, while the mud-pump and its driving engine form a separate unit. The objection to this arrangement is that it is lacking in power for handling the drill-stem. The rig preferred by the writer has two engines so arranged that they may be compounded. The rig selected for the above comparison is powered by two 135 H.P. engines. The drawworks and chain transmission are permanently mounted on the main frame. The two engines are separately mounted on skids and are assembled on the main frame after it is placed on the location. The mud-pump is placed on the ground behind and in line with the engines and operated by a V-belt drive. This arrangement has the advantage of compounded power for handling the drill-stem and also a safety factor in having an engine available for getting out of the hole or operating the pump in case of an engine failure. This rig makes two heavy and one medium truck loads when being moved. The rig-up time is longer than for the truck mounted rig since there is considerable assembling to be done on the location. It is capable of deeper drilling than the truck mounted rig and will drill faster, due to a larger

TABLE 1—COMPARISON OF TRUCK, DIESEL AND STEAM RIGS

	Truck M	Diesel	Steam
Investment in equipment	$18,400.00	$27,100.00	$30,000.00
Weight of equipment in pounds	24,000	65,000	145,000
Trucking cost—100-mile move	10.00	125.00	350.00
Horse power of engines	224	270	500
Size of pump	5×12	6×16	7¾×14
Cost of shedding material	125.00	150.00	200.00
Average hours rigging up	41	61	80
Cost of rigging-up labor	161.00	230.00	346.00
Drilling crew labor per day	92.00	92.00	104.00
Fuel cost per day	36.00-15.00	21.00	60.00
Bbls. water per day	150	150	600
Pounds straight line pull lowest gear	34,000	45,000	42,400
Pounds straight line pull highest gear	2,920	3,880	7,420
Line speed lowest gear ft./min.	185	235	349
Line speed highest gear ft./min.	2,150	2,730	2,000

pump and its being more efficiently located. However, the over all time to 4,000 feet is about the same for the truck mounted and skid type rigs.

Some improvements have recently been made in steam equipment to increase its efficiency and portability. Vertical twin steam-engines are used. The mud-pump is operated by a sprocket and chain drive. A saving is made in fuel and water by using a combined feed-water heater and pump and a superheater on the steam line. The rig is cut down to 7 truck loads. The writer has had no actual experience with a rig of this type. One contractor is reported to have drilled a 3,200-foot Kansas well with a daily average gas consumption of 222,000 feet and boiler feed water consumption of 332 bbls. The above fuel figure is about 30 per cent of anything in the writer's experience and he is not as yet ready to accept it for average operations even with the most approved type of equipment.

In two particular fields the truck rotary rig is especially advantageous. First, in wildcat drilling to a maximum depth of 4,500 feet in areas where fuel and water are difficult to secure and transportation difficult. Second, in established shallow fields at depths from 1,500 to 3,500 feet where it's mobility and shorter rigging up time offset it's slightly slower drilling time.

Present Trends and Practices in Well Completions

(Continued from Page 38)

These, along with core and other formation data, help make possible the accurate correlation of the gological, lithological, and producing nature of the various zones, which is the ultimate aim of the well studies.

The accurate estimation of reserves has always been an important subject and necessary for best operation. Under present conditions, including proration, this work is practically limited to various modifications of the volumetric method. This method must rely, mainly, upon cores and related data for the volumetric relationships, since pressure drilling and flow tests, as previously mentioned, are primarily energy rather than volumetric values. But it should not be suggested, or so interpreted, that flow tests, however obtained during the well's completion, are not desirable. There is no question but that the added information available only through such work is very important. In order that all conditions within the reservoir may be known as definitely as possible, it is preferable that different methods of well completions should be used on selected wells. The data thus obtained should be correlated for the entire reservoir, thus giving a more representative and complete picture of the true reservoir conditions.

The condition of the well after completion should not be neglected when considering the method of obtaining the well information. None of the methods here outlined can be considered as harmful, although certain methods are more desirable than others under various conditions. Two or three of the described methods suggest themselves as being worthy of more consideration in the future than they are now receiving. Reverse circulation with oil and gas mixtures as drilling fluids is especially adapted to drilling or deepening for low pressure areas, where the well was drilled with conventional rotary to the top of the pay. Calcium carbonate as a drilling admix may be valuable where low pressures are encountered, and it is desired to drill in with regular rotary tools. In this case it will then be possible to remove completely the mud sheath from the sand face by acidizing the well upon completion. Setting the casing completely through the pay zone and then gun-perforating with, or without acidizing, at the desired selected zones, offers greater possibilities. If it is desirable to produce the various zones independently of the others (and most students of reservoir operation agree that it is), then this method presents the most convenient and economical manner yet devised. Many completions by this method have been made in South and East Texas, but there have been very few as yet in the Mid-Continent area, although the multiplicity of pay zones in and above the Simpson group should make that zone especially adaptable for this method.

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National Aeronautic Meeting to Be Held in Washington

The National Bureau of Standards will open its doors to aircraft men from all parts of the country during the national aeronautic meeting of the Society of Automotive Engineers to be held in Washington, D. C., March 11-12. Latest scientific developments of these great governmental laboratories will be disclosed at that time.

The two-day SAE meeting will feature a discussion of European aircraft engines by Arthur Nutt, vice president in charge of engineering, Wright Aeronautical Corp., who has recently returned from visiting aircraft centers abroad. SAE President Harry T. Woolson, executive engineer, Chrysler Corp., will speak at the banquet, March 12. Other banquet speakers will include Lieut.-Col. Burton O. Lewis, chairman of the society's Washington section and C. H. Chatfield, director of research, United Aircraft Corp., who will be toastmaster.

Sponsored by the Society of Automotive Engineers and its Washington section, this meeting has the cooperation of the American Society of Mechanical Engineers, the Aeronautical Chamber of Commerce of America, the Air Transport Association of America and the Institute of the Aeronautical Sciences.

Each of the six sessions will bring authorities on technical problems facing the industry. Oil stability, for instance, will be treated by Dr. O. C. Bridgeman, chief of the National Bureau of Standards' lubricants and liquid fuels section. Ideas on design trends and how they affect ground facilities are to be discussed by chief airport engineer L. L. Odell of Pan American Airways. This paper is sponsored by the American Society of Mechanical Engineers. Two air corps men, Weldon Worth and Ford L. Prescott, will give the Army's point of view on lubrication and cooling systems, and on aircraft-engine reduction gears, respectively.

Light truck-mounted-rotary drilling in Colorado

Foundation to Sponsor Contest on the Arc Welding Process

A contest, in which $200,000 will be distributed in 446 prizes to winning papers, is announced by the James F. Lincoln Arc Welding Foundation to encourage scientific study, research and education in development of knowledge of design and practical application of the arc welding process. The plan provides for payment of awards to persons whose papers may be selected as most worthy.

The contest embraces practically every field of industry where arc welding can be applied as a primary process of manufacture, fabrication or construction. Any of thousands of subjects can be selected for papers. The opportunities for participation are indicated in the breakdown of industry into 11 main classifications and 44 subclassifications, of which the petroleum industry is one of the most important.

The winner of the grand prize will receive $13,700, or the first prize of $10,000 for the contest, the first prize of $3,000 for his main classification and the first prize of $700 for his subclassification.

The contest may be entered by any person, or group of two or more persons. To be eligible, each contestant must have actually participated in work upon which the subject is based. The machine, structure, building, manufactured or fabricated product, with respect to which the paper is submitted, must have been actually designed. However, machines, structures, buildings, manufactured or fabricated products will be excluded from this contest which have been designed for welding and sold in the open market, or generally used, prior to January 1, 1937. Nevertheless, any preliminary studies, investigations or laboratory work conducted at any time will be admitted as part of any paper, provided the finished product referred to was not sold in the open market, nor generally used, prior to January 1, 1937.

All communications relative to the contest shall be addressed "Secretary, The James F. Lincoln Arc Welding Foundation, P. O. Box 5728, Cleveland, O." Papers must be postmarked not later than June 1, 1938, and received in Cleveland not later than July 1, 1938.

Aviation Gasoline Consumption

Air transportation in the United States during 1936 utilized over 80,000,000 gallons of motor fuel, of which 65,000,000 gallons were "blue aviation," or Ethyl gasoline, according to figures made public by the Ethyl Gasoline Corp. "Blue aviation" comprised 82 per cent of the aggregate amount consumed in 1936 as against 76 per cent in 1935. Use of Ethyl gained 18 per cent over 1935 while the increase in the entire aviation gallonage was 9 per cent. The total gallonage in 1935 was over 73,000,000, the Ethyl gallonage in the same year being more than 55,000,000.

The South showed the biggest percentage gain in fuel consumption with the Atlanta division of the corporation reporting an increase of 41 per cent in total aviation gallonage, a rise of 54 per cent in Ethyl. The Boston division, comprising the New England States, experienced the second largest gain—36 per cent for all aviation gasoline and 43 per cent for Ethyl.

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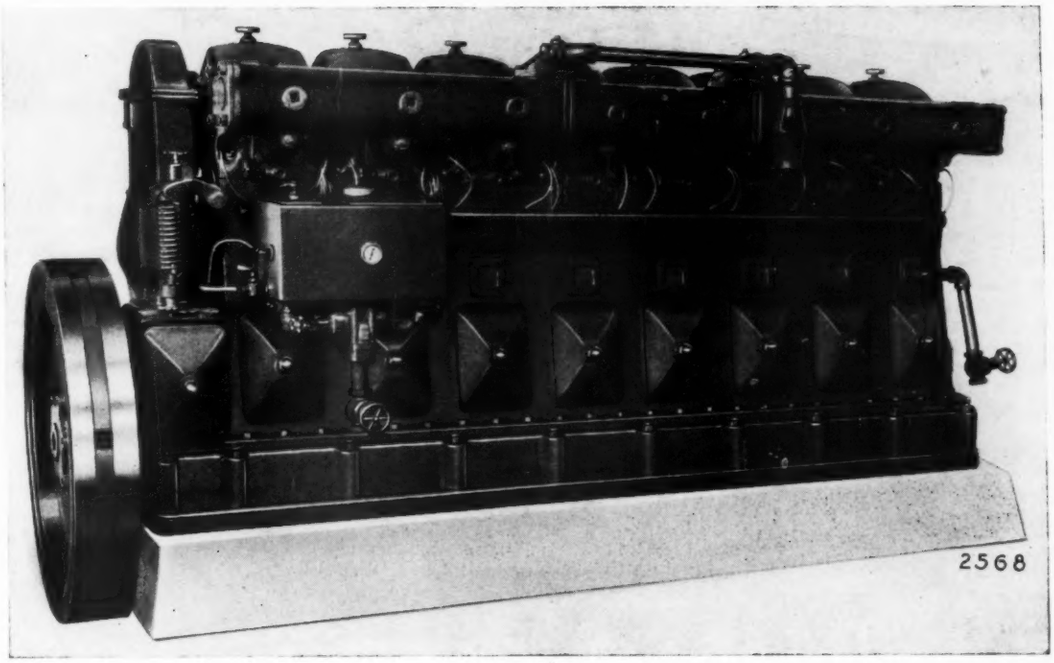

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THE FITTS POOL—

Its Geology and Development

By K. R. TEIS and MAURICE TEIS
E. H. Moore, Inc.

The Fitts pool is located in southern Pontotoc County, Oklahoma, and covers the southeast corner of Township 2 North, Range 6 East, and most of the south half of Township 2 North, Range 7 East.

The first commercial well in the pool was a gas well drilled by W. A. Delaney, Jr., on the A. J. Harden lease in the northeast corner of the southwest quarter of section 30-2-7. The producing sand was in the Atoka formation and the initial production was estimated at 30,000,000 feet per day. This gas production, however, aroused little interest among oil men and a general doubt was felt of the possibility of oil in commercial quantities in the area. This skepticism was well grounded in view of the proximity of the area to the tightly folded and faulted Arbuckle Mountains.

Apprehension regarding the country was dispelled in July, 1933, when E. H. Moore No. 1 Wirick, SE SE SW, section 29-2-7, flowed 75 bbls. of oil per day from the Lower Hunton lime. This well opened the Fitts pool and inaugurated a lease play and exploration that has spread to the Arkansas line.

W. A. Delaney, Jr., tapped the Bromide reservoir for the first time in his Cradduck No. 2, northeast corner section 25-2-6, in June, 1934. Ten months later, with the development of the Bromide horizon progressing rapidly, E. H. Moore added new impetus by the discovery of production in the

K. R. TEIS

upper McLish sands in his Mitchell No. 1, NW SW NW section 31-2-7. In July, 1935, the same interest's Atkins No. 3, SW NW NW section 32-2-7, flowed more than 800 bbls. per hour on a pressure drill test to prove prolific production from the basal McLish or "Wilcox" sand.

The Fitts pool, at present, covers an area of more than 5,000 acres and has more than 600 wells producing oil from one or more of the eight horizons. The sands and the number of wells producing from them are as follows:

Sands—	Number of wells
Shallow sands (in McAlester and Atoka formations)	17
"Cromwell" (Union Valley sand)	2
Hunton	154
Viola	31
Viola-Bromide	217
Viola-Bromide-McLish	153
Wilcox	28
Oil Creek	1
Total	603

***A.P.I.*—Part of paper delivered before production division of the Mid-Continent district of American Petroleum Institute, Tulsa, February 25-26.**

STRATIGRAPHY

Surface—Shales, sandstones and sandy limestones of the Boggy formation of lower Pennsylvanian age compose the surface rocks over the Fitts pool. A miscroscopic explanation of this formation, as provided by well cuttings, shows it to be composed of fine textured shale, mostly gray-green in color, with some maroon and drab, broken by occasional thin beds of fine grained silty sandstones.

PENNSYLVANIAN ROCKS

Savanna Sandstone—This formation, if present in the Fitts pool, has never been differentiated.

McAlester Formation—Lying apparently unconformably beneath the Boggy formation and in turn, overlying unconformably the Atoka beds, is the McAlester formation. It consists of medium to coarsely-micaceous shales, broken in the lower part by sandstones and an occasional sandy limestone bed. These sandstones are lenticular and composed of medium size angular sand grains. Some are lightly cemented with calcite, while others are very porous and produce, locally, considerable gas and small amounts of oil. This sand zone is the source of the oil production of the North Fitts pool, where it is known as the "Manahan" sand.

Hartshorne Sandstone—The Hartshorne, like the Savanna, may be represented by one of the several sand zones in this part of the section, but it has not been differentiated.

Atoka Formation—Due to the unconformity at the top of the Atoka, there has been considerable doubt as to the thickness of sediments that should be assigned to this formation. The upper part of the formation consists of dull gray calcareous shales and finely crystalline gray limestone beds. There are usually two or more zones of sponge spicules in these shales and limestones which give the rock, when seen under the microscope, a fibrous appearance. Usually, between the upper two spicule zones, where more than two zones are present, is a 10 to 20-foot bed of buff very finely crystalline limestone, the so-called "Atoka Dense." This bed is not present over the entire pool but where found it is a good marker.

Sandstones, broken by coarsely micaceous gray shale, make up the middle and lower portion of the formation. These sandstones, medium to coarse-grained, angular and in places slightly glauconitic, vary greatly in porosity. Some are quartzitic and very hard; some tightly cemented with calcite, while others are very porous and provide an ideal reservoir. These porous beds in places over the pool, carry large volumes of gas under extremely high pressure, and in some wells have produced as much as 100,000,000 feet of gas per day. These sands, known as the "Gilcrease" sand, were responsible for most of the "blow-outs" in the early history of the pool.

Wapanucka Formation—Underlying the Atoka beds with a minor inconformity, is the Wapanucka formation. It consists, in the upper part, usually of two limestone series broken by shale beds and separated by 80 feet-100 feet of shale and in the lower half of shale. The upper of these two limestone series is composed of the more massive beds and attains a thickness, off-structure, of some 60 feet-80 feet. In most of the wells on structure, however, this bed, composed of finely crystalline light gray oolitic limestone, is thinned to some few tens of feet and may be entirely removed due to post-Wapanucka erosion.

MAURICE TEIS

The second limestone series is more shaley than the upper and very oolitic. The shale of the Wapanucka is quite distinctive and may be readily differentiated from the other Pennsylvanian shales. It is rather light gray in color, very finely and evently micaceous, of medium texture and has a

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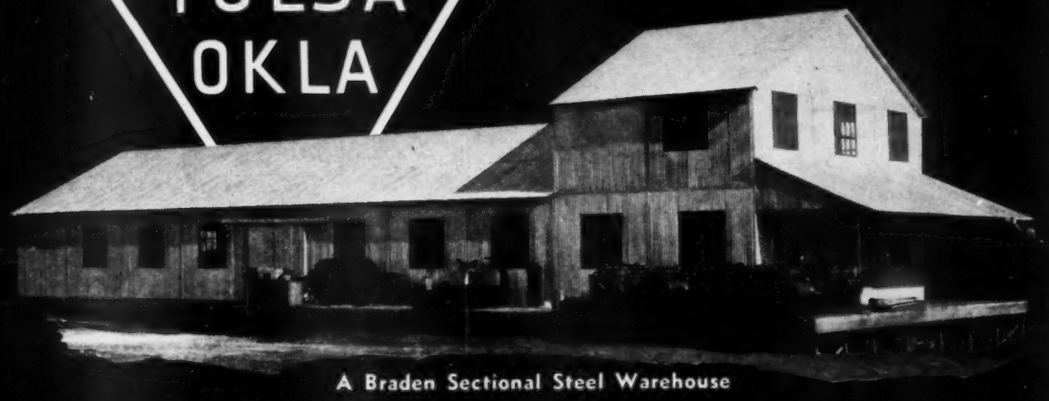

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graphitic luster. The usual thickness of the Wapanucka in the pool is 400 feet.

Union Valley Formation—Lying, with apparent conformity, beneath the Wapanucka is the Union Valley formation. The upper 50 feet is a gray, argillaceous, glauconitic limestone containing sponge spicules and becoming sandy toward the base. This limestone bears a striking similarity to the spicule limestones of the Atoka and in wells where the stratigraphic sequence has been broken by faulting, differentiation is very difficult.

Beneath this limestone is some 150 feet of broken sandstone known in this area as the "Cromwell" sand. It is composed of medium to fine grained silty sandstone beds, dark gray to black in color. In some places it is very porous, while in others it is tightly comented and calcareous. These sandstone beds are broken by medium-textured gray micaceous shale alternating with dark gray coarse-textured sandy shale.

Over most of the pool where the porosity of these sandstones is high and the structure favorable, they have carried encouraging shows of oil and gas. There has been some gas produced from this horizon but the first "Cromwell" oil well is now being completed by the E. H. Moore, Inc., No. 5-A Woodroof, NE NE SE section 29-2-7. It appears to be capable of producing by natural flow, some 80 to 100 bbls. of oil per day.

Pennsylvanian-Caney Formation—The Pennsylvanian Caney of the Fitts pool consists of some 400 feet of gray shale. The overlying shale of the Union Valley formation grades into the Pennsylvanian Caney with apparent conformity and the lithologic break that marks the contact is not discernible.

The shale of the upper part of the formation is dark gray, fissile, and in some is imbedded fine sand grains which give the surface of the shale a blistered appearance when seen under the microscope. The lower portion is made up of soft gray, very thinly laminated shale, the so-called paper shale.

MISSISSIPPIAN ROCKS

Mississippian Caney Formation—The shale of the Mississippian Caney presents a pronounced change in lithology from the shale of the Pennsylvanian Caney which overlies it with apparent conformity. The Mississippian Caney is composed of brownish-black shale with a greasy luster and a cholocate-brown streak. The cuttings are chunky and the fracture uneven. There is usually considerable glauconite in the shale near the contact with the Pennsylvanian Caney and in the upper part ironstone or "siderite" concretions. This formation, usually about 100 feet thick, provides a good marker over the entire pool.

Mayes Formation—The lithologic change from the Mississippi Caney shale to the brown, micaceous and calcareous grit that is known as "Mayes" limestone is gradational and just how much of the sediment should be assigned to the Mississippi Caney and how much to the "Mayes" has been the subject of futile controversy. The "Mayes" contains considerable glauconite near the base.

Sycamore Formation—At the base of the "Mayes" and lying conformably on the Woodford is the Sycamore or Weldon limestone. It is not present in all the wells in the pool and probably does not attain a thickness in excess of 10 feet anywhere in this area. Lithologically, the limestone is hard, finely-crystalline and light bluish-gray in color.

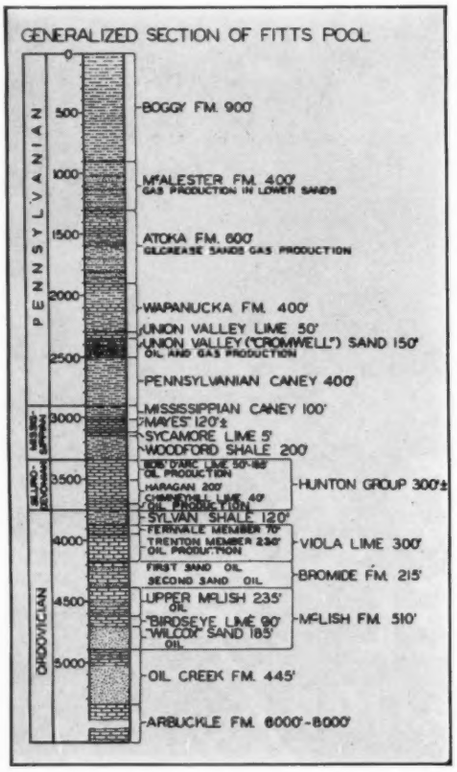

Plate 1—Generalized section of the Fitts pool

Woodford Formation—The Woodford consists entirely of dark brown shale, rather hard and with an uneven fracture. At the top and in places throughout the entire thickness of the bed is considerable dark brown chert. The distinctive and diagnostic Sporangites common to this formation elsewhere is present here. The Woodford has a usual thickness of 200 feet in the pool.

SILURO—DEVONIAN ROCKS

Hunton Group—The Hunton limestone of the Fitts pool can be readily differentiated into three distinct formations—the Bois d'Arc at the top, the Haragan as the middle formation, and the Chimneyhill at the base.

The Bois d'Arc formation is composed of coarsely-crystalline pale greenish limestone. The green coloration is due to the presence of glauconite which is diffused through the limestone. Milk-white translucent flint is present in the upper part of the formation, attaining considerable thickness on the east side of the pool.

The thickness of the Bois d'Arc varies from about 50 feet, in western and central part of the pool, to a maximum of 165 feet on the east edge. This thinning is no doubt due to erosion and is evidence of a minor uplift accompanied by an interval of erosion following the deposition of the Hunton.

In most of the wells in the pool there is a show of oil or gas in the top of the Bois d'Arc limestone, while in the east part of the pool and especially on the northeast flank of the structure, the limestone is saturated throughout most of its thickness. This bed is the source of the prolific production from the Hunton in that part of the pool.

The Haragan (strictly speaking, the Haragan and Henryhouse undifferentiated) is composed of gray finely-crystalline silty limestone. It is cherty in places—a bluish-white chert—and is barren of oil or gas throughout its thickness in the Fitts pool.

CHIMNEYHILL FORMATION

The Chimneyhill or lower formation of the Hunton consists of three distinct members—a pink crinoidal bed, usually about 15 feet thick at the top, a middle member of snow-white glauconitic limestone 20 feet thick, and a basal oolitic bed, some 7 feet thick. This oolitic limestone shows oil staining over the entire pool and is a producing horizon in many wells.

Sylvan Shale—The contact between the Sylvan and the overlying Hunton is one of conformity. Lithologically the Sylvan is a fine texture shale, gray-green, except near the base, where it grades into a brown color. Most of the wells drilled in the pool have about 120 feet of Sylvan.

Viola Limestone—The Viola underlies the Sylvan conformity and on lithologic differences is divided into two members, the Fernvale above and the Trenton in the lower part.

The Fernvale member of the Viola consists, usually, of about 70 feet of mottled gray-white coarsely crystalline argillaceous limestone. It shows only a little staining of oil in most of the wells in the pool. Near the base, where this member overlies the Trenton, it becomes dolomitic and sandy.

The Trenton member consists mainly of finely-crystalline, light brown limestone containing light brown chert, but in places throughout its normal thickness of 230 feet there are coarsely-crystalline, dolomitic and fossiliferous zones. The brown color is no doubt due to oil showing and in some parts of the pool great thicknesses of this member are saturated with oil. At the base is a 10-foot by

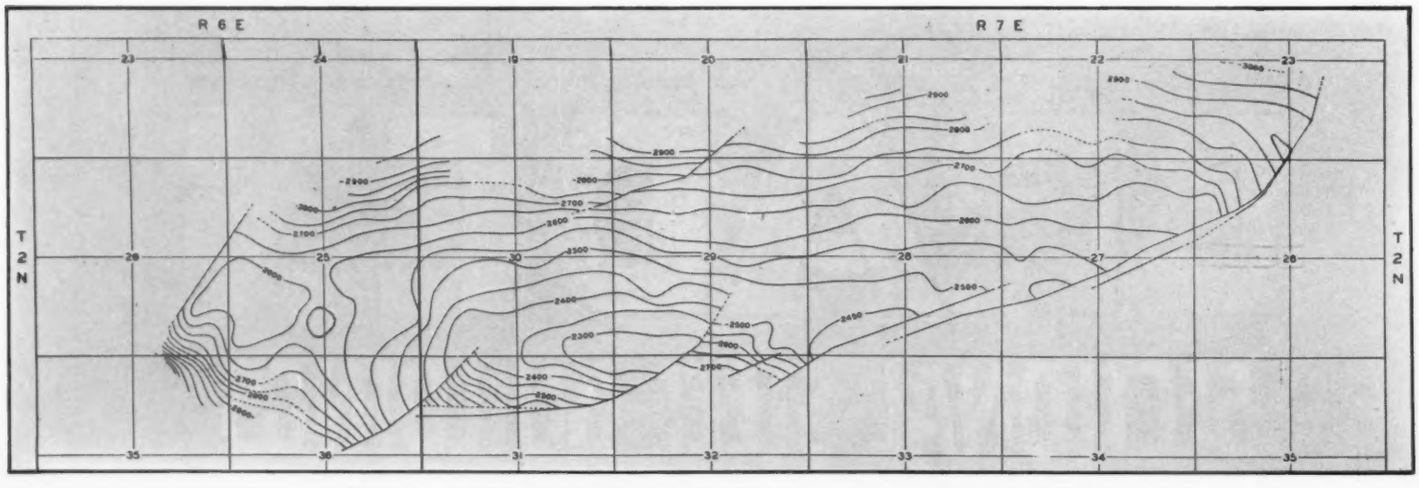

Plate 2—Structure map of the Hunton formation, Fitts pool. Contour interval 50 feet

CRACKING HIGH SULPHUR CRUDES

In the design and operation of recent cracking plants for several major oil companies, Lummus has successfully solved corrosion problems associated with high sulphur crudes. The important features of these Lummus-built cracking plants are the provision of operating conditions within the unit that give the minimum corrosive action, together with the proper selection of metals for each condition.

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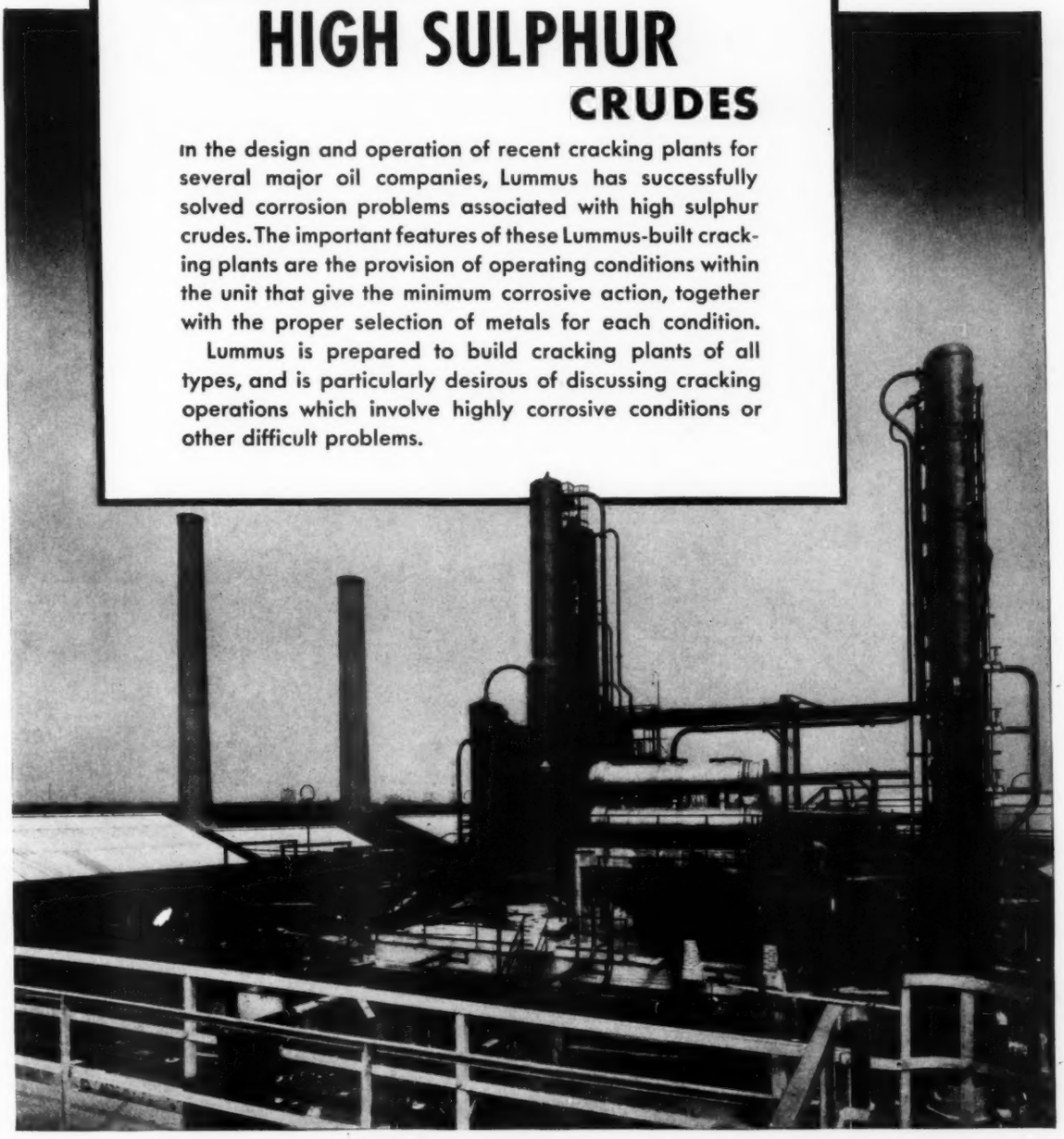

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LUMMUS

PETROLEUM REFINING PLANTS

20-foot bed of very finely crystalline chocolate-brown limestone containing dark brown chert.

Bromide Formation—There is no apparent unconformity between the Viola and Bromide formations. The Bromide is composed chiefly of limestone, but has two well developed and distinct sandy zones. The first of these sand zones occurs about 115 feet below the top of the formation and is some 30 feet to 40 feet thick; the sand usually occupies the lower 30 feet of the formation. The upper Bromide is mainly gray, dense limestone with some Dolomite, grading into coarsely-crystalline limestone above the first sand zone. The sandy zones consist of coarse-grained well rounded sand cemented with Dolomite and Calcite. Between the sands is a section of finely crystalline dolomitic limestone. Beds of fine texture green shale are intercalated with the sandstones in the lower 20 feet of the formation. Production from the Bromide in the Fitts pool is chiefly from the sandy zones. The normal thickness of the formation is 215 feet.

McLish Formation — There is no evidence of an unconformity between the Bromide and the underlying McLish formation in the Fitts pool. The McLish is composed of gray, dense limestones; pale green and gray Dolomite; sandy Dolomite and some green shale. Lensing and inter-fingering of these different beds in the upper half of the formation is the rule.

To generalize, the stratigraphy of the McLish consists, from the top downward, of a dense limestone series; a sandy Dolomite zone; another dense limestone series; another sandy Dolomite zone; a massive dense limestone bed; and a dolomitic sand at the base. The normal thickness of the formation is 510 feet.

The interval from the top of the McLish to the massive dense limestone, the so-called Birdseye dense, is usually about 235 feet. This limestone bed measures about 90 feet in most of the wells, while the sand beneath it, known as the "Wilcox," is about 185 feet thick. This sandstone is composed of the fine sand cemented with gray-green Dolomite. It is very porous and an excellent oil reservoir. Most of the sandy zones of the upper McLish carry oil but a few are barren.

Oil Creek Formation—Only one well in the Fitts pool has drilled a full section from the "Wilcox" sand to the Arbuckle. This well, the E. H. Moore, Inc., No. 1 Benton, NW NE NW section 32-2-7, had 445 feet of section which has been assigned to the Oil Creek formation. This section is composed, in the upper 125 feet, of mottle gray and white crystalline limestone beds alternating with hard gray micro-crystalline magnesium limestone green shale, and dolomitic sandstone. The lower 320 feet composed of fine dolomitic sand. In the Benton No. 1 salt water was found in the upper sands and sulfurous water in the basal sand. There is, however, one well near the fault zone in the pool producing from one of the upper Oil Creek sands.

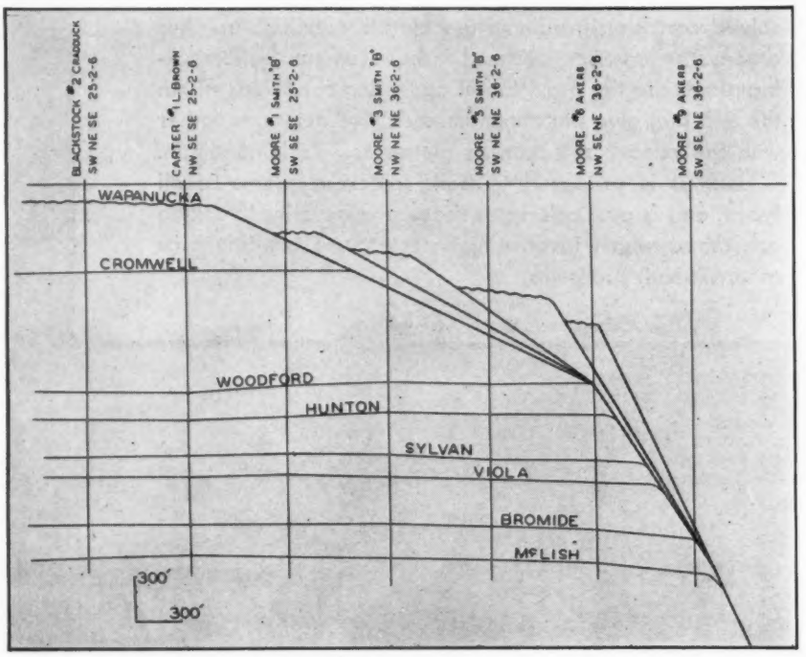

Plate 3—North-south cross-section through fault zone of beds below the Wapanucka formation, Fitts pool

Arbuckle Formation—The thickness of the Arbuckle formation in the mountains to the south has been found to be between 6,000 feet and 8,000 feet. No wells in the pool have drilled more than 300 feet in the Arbuckle but the portion that has been observed consists principally of pale green and off-white finely-crystalline Dolomite, with some light gray-green fine textured shale and in zones, light amber finely oolitic and milk-white flint. There are occasional sandy streaks in this upper part of the Arbuckle which for the most part are quartzitic. Small shows of oil have been observed in the cores and cuttings from the Arbuckle but it is considered too low, structurally, to produce.

In the first part of their article the authors have dealt with the history, stratigraphy and structure of the Fitts pool. In the second and concluding portion, which will be presented in a subsequent issue of The Oil and Gas Journal, they will discuss its development and production practices used.

STRUCTURE

Surface—The regional surface structure was first mapped by George D. Morgan in 1923, and has been checked by several others since that time. This map was published with a report on the area in Bulletin 2 of the Bureau of Geology, "Geology of the Stonewall Quadrangle, Oklahoma," in 1924.

The Fitts pool lies about in the center of the Frank Graben, a down throw block between the Lawrence uplift on the north and the Arbuckle uplift on the south. The term Graben is rather incorrectly applied to the area, since the strict meaning of the word is a fault trough, long and narrow, with more or less parallel sides. This area is triangular in shape with the limiting faults converging toward the west. Regarding the surface structure of the Frank Graben, Morgan wrote, "The general structure of the strata within it consists of two sharp drag synclines, along the limiting east-west faults, and between these, of a broad westward plunging anticlinal fold."

Subsurface—The subsurface structure of the Fitts pool is an east-west trending anticline limited on all but the north side by normal faults. (See structure contour map). The fault on the west sides strikes N. 30° E. and hades to the west. The fault bounding the pool on the south is not a single fault but rather a zone of step-faulting. This is especially true of the structure of the upper beds. Movement in the lower, massive limestone beds in places was along single fracture plane, while in the over-lying less competent beds it was along several parallel planes (see cross-section). The low angle step-faults of the Wapanucka and Younger strata converge to form a high angle single fault in the lower beds.

Branching off this major fault zone, striking northeast, are cross-faults which die out northeastward. The sands on the down-throw side of these cross-faults are not as productive as those on the up-throw, and wells close to the fault on both sides show a decrease in the porosity of the sands.

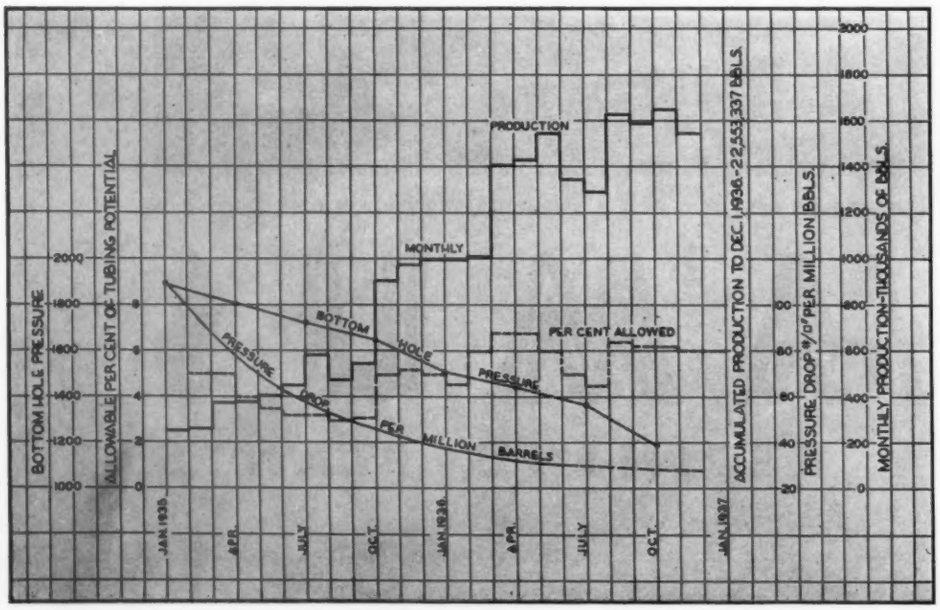

Plate 4—Pressure decline and production of Fitts Upper Simpson formation

Chemical Industry Exposition

The sixteenth exposition of Chemical Industries will be held at Grand Central Palace, New York, December 6-11. Mr. Charles F. Roth, who has been similarly responsible for all of the previous expositions, will again be personally in charge.

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Portable Rigs for Shallow Drilling

By D. M. AULD
Phillips Petroleum Co.

The title of this paper is very broad in scope and might have read simply "Rigs for Shallow Drilling," since equipment for the purpose stated must be of economic necessity portable. Furthermore any discussion of drilling equipment must take into account the type of section to be drilled, and be confined to rather definite depth limitations. However, in order to avoid too much generalization in treatment, we believe that the subject may be confined to consideration of depths of 2,000 feet, with a geologic section such as encountered in northeast Oklahoma or southeast Kansas. In this area well depths in general will vary from less than 400 feet for a Bartlesville Sand well with less than 30 feet of limestone in the entire section to 2,000 feet for a Siliceous Lime well with approximately 500 feet of limestone to be drilled. With the advent of intensive repressuring and water flooding have come new demands on drilling equipment of this subject.

WIRE-LINE SPUDDERS

Probably the first type of portable rig which should be considered is the wire-line spudder since they have proved capable of doing a good job of drilling in this heavy lime section area, combining a good rate of drilling progress with fair degree of portability and a minimum of rigging up expense.

Portability of most present day spudders cannot be increased appreciably without placing the equipment on a truck. This is obviously impractical with any spudder except the lightest types made for depths of 500 feet or less. There is now a tendency to mount light equipment on motor trucks but such equipment is almost exclusively for cleaning out, reconditioning, or completing after rotary drilling. The investment in a truck large enough to permanently mount a spudder of conventional design would be prohibitive from an economic viewpoint, and such mounting would provide little if any advantage over a steel wheel mounting.

The type and size of spudder to be selected for drilling will be governed by a number of factors; for instance: Will it be used on concentrated location drilling without long moves? Will it be confined to definite depth limits? What size hole is to be drilled? What kind of section is to be penetrated? How much pipe will be set? Will it be used for reconditioning work later? And, what kind of fuel is available?

As an example, suppose that spudders are needed to drill up a water flood development where spacing is to be from 440 feet to 330 feet between locations. The depth is 600 feet of which about 80 feet is limestone, 8-inch surface casing and 6-inch sand string pipe to be set. Enough machines are to be used to give each machine about 20 wells to drill in something over three months. There is the possibility that some of these machines will be used for reconditioning work after the drilling program is completed. Fuel available is either gasoline, kerosene, or distillate. In addition there is the likelihood of these machines being used to drill 1,200 foot wells in the same field. Since the cost of these machines cannot be written off on the 600 foot drilling, there being too small an amount of it in sight, it would appear logical to select the next largest size spudder rated by the manufacturers for from 1,500 to 2,250 foot drilling. For this type of concentrated drilling the mounting on four steel wheels would be most economical, since tractors and trucks will be available for making the short moves and self propelling equipment would not be necessary.

The engine either gasoline or diesel is mounted on the sills of the spudder, and is connected with a V-belt drive. This for the purpose of eliminating the separate moving and aligning of a skid mounted power unit. Calf wheels should be provided in this case because of the versatile duty demanded of the machine. The stroke at the hole should be about 40 to 48 inches and the speed about 45 strokes per minute swinging about 2,500 pounds of tools. Such operations should give satisfactory drilling progress. The sand reel should have a line speed of about 700 to 1,000 feet per minute. The bull-wheel or tool drum should have spooling capacity on the storage side of the divider equal to the maximum depth for which the equipment will be used. The mast for this machine should be 45 feet high to the drilling sheave and about 40 feet to the casing line sheave. This mast is slightly longer than regularly furnished in spudders of this class; the added height being suggested to allow the running of maximum 30-foot lengths of pipe; a practice which is not being followed at this time but one which may come into use as second hand casing becomes scarcer for equipping secondary projects.

A.P.I.—Before production division of the Mid-Continent district, American Petroleum Institute, Tulsa, February 25-26.

The power unit for this machine should develop at least 40 net B.H.P. when running at pulling out speed which should hoist the tools at an average rate of about 200 feet per minute. When selecting the power unit the nominal horsepower ratings should be considered cautiously, and proper deductions should be made for accessories, type of fuel, etc., when these items were not taken into account in rating the engine. The torque curve maximum should be near or slightly behind the pulling out speed of the engine. Finally in regard to power, we all know that there is no economy in being niggardly in the application of power units, and that a few extra dollars for reserve power usually nets good returns. Also, it should be remembered that the machine under discussion is for maximum depths of 1,200 feet and for swinging 2,500 pounds of tools. Any appreciable change in depth or weight would require entirely new consideration.

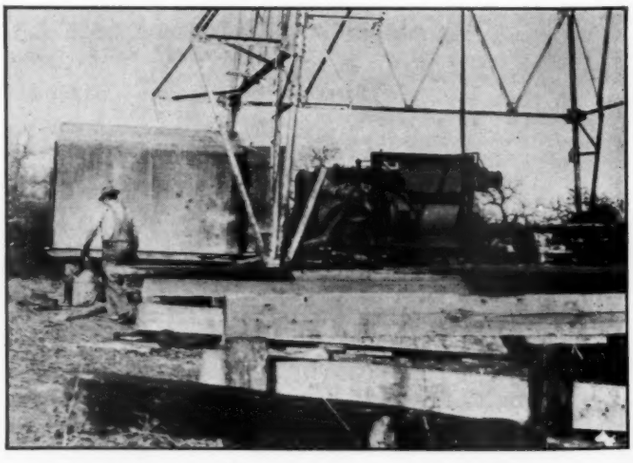
As auxiliary equipment for this type of machine, we suggest a tool house mounted on four wheels. The size will depend on individual preference, but 6 feet by 8 feet by 5 feet high above the sills of the trailer mounting, we think, should be sufficient. End and roof flaps hinged to the tool house can be swung into position and bolted to form a half derrick house in the form of a lean-to which will be about 7 feet high on the side toward the hole. This arrangement should provide shelter as well as storage space for small tools, parts, and supplies. The working floor can be made in two sections and skidded over the ground on many short moves. The generator and blower can be mounted as a separate skid unit or installed in the tool house, the latter location being preferable providing a small unit is used.

In the foregoing remarks nothing especially new or original with the writer has been presented, the intention being principally to emphasize the importance of selecting the right type machine and power unit for a given job of drilling. Special emphasis should also be given to the desirability of having all of the equipment except the heavy tools and floor installed on two portable units.

MANY TYPES IN USE

In general, wire-line spudders are in a satisfactory state of development, and there are a large number of various size units from which to select. New improvements of a minor nature are constantly being made by the manufacturers, a good many of such improvements being the selection of better materials for construction. No radical changes in the principles of operation of such equipment are likely to be made since the methods of cable-tool drilling are well understood by both the manufacturers and users, and are rather definitely limited to the fundamental principles of churning the formations into mud which can be bailed out of the hole. The fine points of operating any cable tool drill so as to obtain maximum drilling progress can be learned only by long experience.

Many systems of drilling have been proposed as is evidenced by the large number of patents which have been granted. Some of these may have merit, but a tremendous amount of research and development cost must be incurred before they can be put into practice. At this time we have the choice of cable tools, rotary tools or a combination of the two. It has been generally believed and almost universally conceded by experienced drillers that only cable tools can be employed economically in drilling the shallow wells of northeast Oklahoma. Undoubtedly this has been true and may still be true, but nevertheless, there are



One of the several different types of portable rigs being used in drilling the Bryson field, Jack County, Texas

Photograph above shows TRINITY "INFERNO" *on location in Rodessa Field.* (Photo by LeDOUX)

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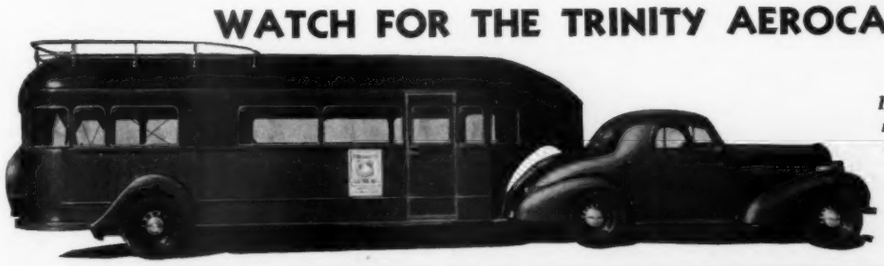

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those who now believe tthat the rotary system of drilling may be applicable in this area providing light weight equipment of special design is used.

The drilling of test holes with small core-drills has suggested to some that a larger rotary drill with the hydraulic feed feature of the core drill may be used successfully for drilling gas or water input holes as well as oil wells. Such drilling has been done with large capacity core drills with fair results as to progress, but it is the writer's opinion that in order to compete with cable tools the equipment used for the rotary drilling must be changed somewhat in the direction of conventional rotary practice at the same time retaining the necessary features of the core drill. If rotary equipment can be built to do the drilling to the top of the sand at competitive cost with cable tools, the advantages of the rotary are obviously apparent from that point on to the completion of the hole. The sand may be cored economically thus allowing the intelligent selection of casing or packer point and the total depth for completion. The walls of the well bore may be reamed or scraped, circulating the cuttings out with clear water, or possibly a combination of air and water. The sand might even be reamed selectively taking into account variations in permeability. The hole may be cleaned out after shot probably just as effectively as by the use of cable tools.

If, in developing a project for water flooding or intensive repressuring with gas or air, the operator considers core information on each well indispensable to proper completion of the wells, then the light rotary-drill is given a considerable advantage over cable tools. In other words, the drilling to the top of the sand with cable tools and the subsequent coring of the sand with portable core-drills will be a rather costly operation due to the delays and moving expense. The portable rotary drill on the other hand will be able to drill the well, core the sand, and complete the well in one fairly continuous operation. It is true, of course, that cable tool cores may be taken. However, the cost of such cores is in general just as great as the rotary core and not as satisfactory for testing.

If rotary drilling is ever to be successful in the territory under discussion, means must be provided for applying weight to the bit while drilling lime near the surface, and adequate circulation must be provided. In most of the past attempts at drilling input or production wells with core drilling equipment both weight and circulation, particularly the latter have been lacking. Furthermore, compactness and portability must be achieved if drilling is to be done economically under conditions where moving and rigging up is necessary every three to ten days. The assembling of the entire equipment including the pumps and rotary table on one portable unit such as the typical core drill is one possibility. In this set up, a truck mounting might be the most economical, using the truck motor for driving the pumps, with an auxiliary engine for the draw works, and rotary or vice versa. Another combination might be the draw works, rotary and mast mounted on a comparatively light truck powered from the truck motor with the pumps and pump power unit on a steel wheel or pneumatic tire four-wheel trailer. Still another set up for concentrated drilling might consist of units as last outlined except that each unit would be assembled on a four-wheel trailer. The selection of any combination of mounting will depend on the kind of drilling to be done and will be determined largely by the same factors taken into account in selecting portable cable equipment.

In determining the weight to be applied and the amount of circulating, the size hole to be drilled, the formation, and the size drill-pipe to be used, are all important factors. The rock bit manufacturers recommendations as to weight and circulation should be given careful consideration. Since several portable or semi-portable rotary rigs are in successful operation on heavier work we suggest that the amount of circulation necessary be determined by providing at least as much vertical velocity of mud in the annular space between the drill pipe and the wall of the hole as has been found to be satisfactory on larger rigs. Using these data as a basis, the circulation should be about 225 gallons per minute when using 2⅞-inch O.D. drill-pipe and a 5⅞-inch bit. Pressures are not expected to exceed 400 pounds. In order to reduce pressures and increase the flushing action at the bit, drill-pipe and tool joints having an opening of at least one inch appear preferable over the external flush joint core drill rod which in the same O.D. size has an opening through the joint of about 1⅞ inches.

The use of drill-pipe and tool joints has other advantages in that elevators instead of hoisting plugs are used to handle the pipe and the tool joints will have a stabilizing effect on the drill-pipe column especially when compressive force is applied by the hydraulic feed mechanism. The downward force to be applied to the bit by the hydraulic feed will depend on the depth and the degree of hardness of the formation, maximum demand being in cases where hard limestone is encountered on the surface. This condition will occur very frequently in northeast Oklahoma and especially so in the Nowata field. The hydraulic feed system therefore should be designed so as to exert a total force of at least 8,000 pounds, which would be slightly over 1,000 pounds per inch of rock bit diameter when using a 7½-inch bit for setting surface pipe. The length of travel of the hydraulic feed will be a matter of individual preference and manufacturers designs. However, if manually operated chucks are to be used in gripping the kelly, the feed should be at least 30 inches long so as to eliminate frequency of chucking and resulting idle time. A kelly with a bore large enough to pass the drill-pipe through it will offer some advantages over having to lift the drill string off bottom and retract the rotary table when adding a joint of pipe.

The mast for such a rig should be a part of the unit and should be arranged in such a manner as to permit raising by power either through a hoisting line or hydraulic cylinders. The height and construction should allow handling the pipe in doubles and standing same in the mast. If drill pipe in fifteen foot lengths is used the height of the mast may be about 42 feet. Sufficient strength should be provided to handle, 2,000 feet of 20-pound pipe or 40,000 pounds. Drilling line, sand line, and cat-line sheaves should be installed in the mast.

The draw works for this rig should have a capacity of about 250 feet of ⅞-inch and should be designed for single line pull of about 6,000 pounds with an average line speed of 250 feet per minute. These conditions should be met with the draw works engine running near its maximum governed speed and with the transmission in high gear. An engine with a rating of about 65 H.P. will be required.

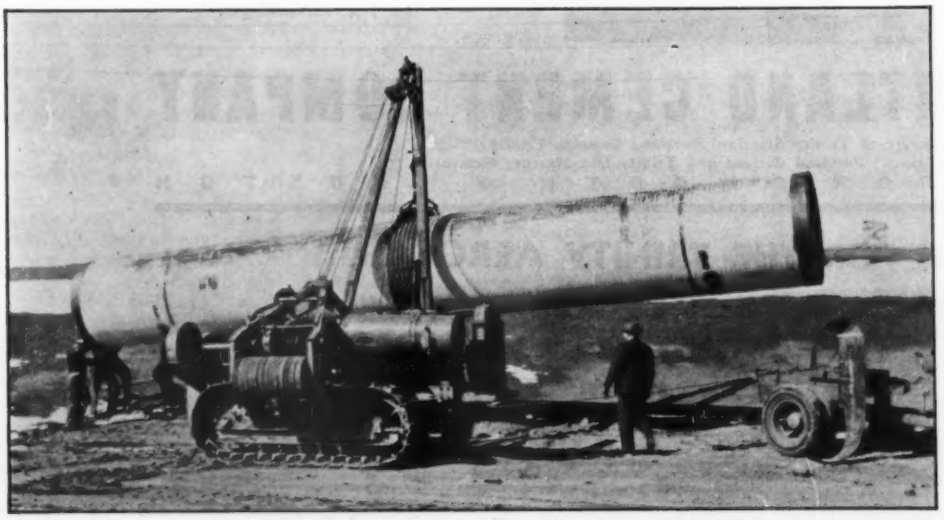
As to the type drives to be used on the drums, whether the final drive is to be jaw clutch or friction type will depend on individual preference and the kinds of available equipment. For the sand-reel drive, however, the writer sees no objection to the friction wheel arrangement which is still used to some extent on spudders.

The rotary may be driven through a splined shaft on the center line of the unit, in which case the draw works must be driven through a right angle take off from the same shaft or a chain drive may be used from the jackshaft of the draw works. In the latter case the chain will be allowed to go slack when the rotary is retracted from over the hole. In either case the engine transmission will be available to vary speed of rotation provided it is desired to go beyond the range of speed permissible through throttling the engine. For rotary speeds we suggest that the table turn at 200 R.P.M. at the maximum governed speed of the engine in high gear. Almost any range of speed is obtainable below this maximum by throttling or shifting gears or both.

The construction of such a rig as has been very meagerly described is largely a matter of assembling equipment now designed and in use. There are several small draw works of the well-servicing winch type which should be satisfactory for this type of rig. The enclosed rotary and hydraulic feed system is more limited in availability but there are several of them on the market. Mud-pump or pumps may be had in a fair range of sizes for this work. For this particular rig two 4½-inch by 6-inch power pumps or their equivalent in capacity would be required. The mast, the assembling and the smaller pieces of accessory equipment will have to be determined after the major items are decided on and the type of mounting selected.

In conclusion, we must reiterate that cable tools do a satisfactory job of drilling in the area we have considered, and are the accepted means and practice today. There has been, however, just enough work done with core drills in this territory recently to suggest that some adaptation of the rotary system may be practical. Only experience will decide.

LINE OF 63-INCH STEEL PIPE LAID IN COLORADO

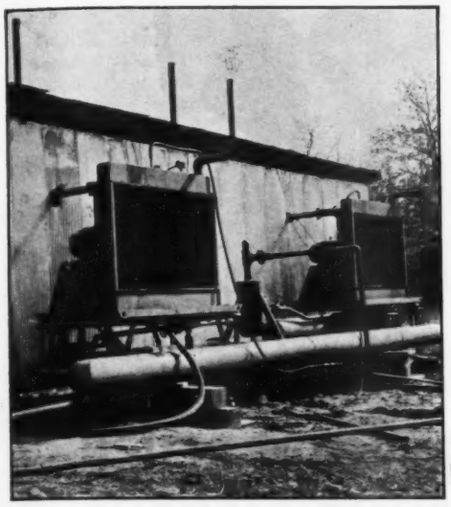


Handling about 7 miles of 63-inch steel pipe for a water system in Denver, Colo., placed an unusual strain upon the equipment used by Williams Brothers, Inc., pipe line contractors of Tulsa. This pipe came in 40-foot sections with wall thickness of five-eighths and nine-sixteenths inch and weighed about 9 tons per joint. In the accompanying picture the Caterpillar tractor fitted with an all-steel boom is handling a joint of this pipe from the bed of a 15-ton truck which has just moved out from under the pipe. This pipe was laid with special Dresser couplings and all bends were made with tube turns carefully formed to fit snuggly into the ditch which was dug to dimensions.

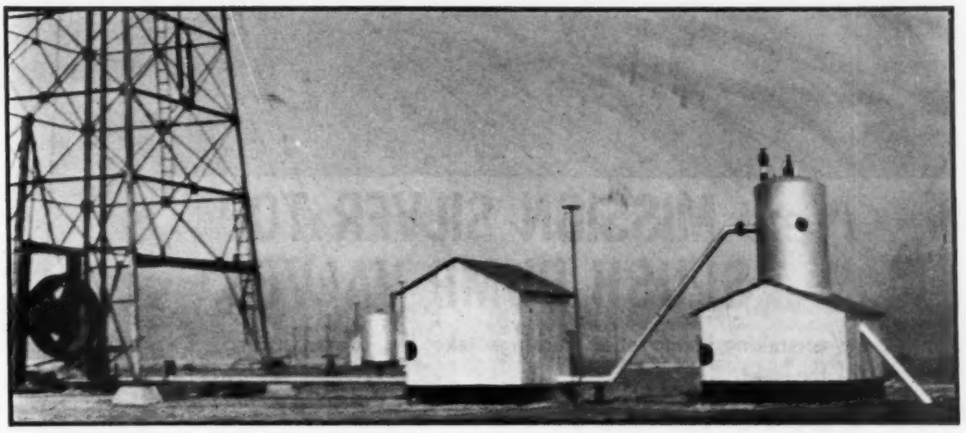
OPERATING IDEAS

Manifold Mounted Radiators

To remove the large radiators from the engine room and thus gain more efficient cooling, a large drilling company operating diesel-electric rigs in the Crescent field of Oklahoma has devised the arrangement shown in the accompanying photograph.



The radiators are mounted on the gas manifold and extensions placed in the water-lines connecting the engines to the radiators. A platform made of welded pipe is welded to the manifold to provide a firm base for the radiators. This practice has proven very effective since the radiators are exposed to much cooler air than is present in the vicinity of engines which are housed in buildings.



Separator and Lubricator on Flowing Well Housed

Due to rapid changes in temperature in the Panhandle area one oil company operating in the Sunray pool of Moore County, Texas, has adopted the practice of housing both the regulating equipment on the separator and the chemical lubricator on its flowing wells to prevent them from freezing. In this area it is not uncommon for temperatures to drop 30 to 40 degrees within one hour and before the flow equipment can be adjusted to the new temperature.

Circulating Pump on Trailer

An oil company operating in the Haven, Kansas field, Burrton County, has devised the pumping installation shown here for circulating oil in wells before acidizing. As shown, the circulating pump and 4-cylinder engine are mounted on a two-wheel trailer which is hauled to the well to be acidized. Thus the company always has available a portable pumping unit that does not require a separate vehicle; as would be the case if it was mounted on a truck. The engine will operate on both gas or gasoline and pumps about 300 bbls. per hour. The trailer is provided with two adjustable legs in rear and one drop-leg bolted to the coupling rod.

Pump Room Illuminated by Exterior Flood Lights to Reduce Fire Hazard

To reduce the fire hazard around its pump stations one large pipe-line company has adopted the practice of illuminating the pump room by use of flood lights installed outside of the building, thus eliminating all wiring in the pump room. At the station shown here three large pumps are employed, each being lighted by a flood light placed on the outside of the building and lighting the pumps through windows.

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Spectrographic Analyses of Oil-Well Brines

By F. H. EMERY
Chemical Engineer, Bedford, Ohio

Since the positive identification of oil-well brines is a matter of great economic importance,[1] a series of brines were analyzed on the spectrograph; the samples being selected as representative of brines that could not be differentiated by ordinary methods of chemical analysis.

The spectrograph has been applied to the analysis of potable waters,[2] many unsuspected elements being found in this survey. There has also been considerable activity in applying the spectrograph to problems of mineral analysis.[3]

The brine samples were shipped in glass bottles closed with corks. These corks were protected with sealing wax and the bottles were sealed with sealing wax. One-tenth of a cc. of the sample as received was placed on a hot pure carbon electrode. Blanks were run on these electrodes and they were found to contain no impurities. A sample was added to the electrode immediately after the arc for the blank determination had been extinguished. Sufficient heat remained in the electrode so that the brine sample was evaporated to dryness on the electrode. The electrode and sample was then burned with a 10-ampere direct-current arc for 40 seconds. The light obtained was passed through a quartz Littrow type spectrograph[4] to produce the spectra shown in Figure 1. Two exposures are necessary to record the spectrum from 2,400 Angstrom units to 7,000 Angstrom units.

TABLE 1—SPECTROGRAPHIC ANALYSES

(Results are in parts per million)

Samples—	1	2	3	4	4,109	4,110
Aluminum	150	3	16	25	17	35
Barium	4	20	3	126	4	3
Boron	110	1.5	32	25	17	35
Calcium	M	M	M	M	M	M
Copper	11	0.0	0.0	0.0	0.2	0.4
Iron	11	62	0	0	70	5
Lead	2	1.0	3	1	2	2
Lithium	21	3	5	4	5	5
Magnesium	M	M	M	M	M	M
Manganese	0	0	0	0	4	4
Potassium	21	5	16	4	5	5
Sodium	M	M	M	M	M	M
Silicon	42	5	16	13	35	35
Silver	0	0	0	0	0	2
Strontium	1,100	780	790	630	880	870
Tin	9	0	0	0	0	0
Vanadium	5	4	4	3	4	4

M indicates element too high to estimate.

Two of the brine samples together with the iron arc were taken in such a way that lines common to all three samples appear as one line. These are known as comparison spectra and are produced by the use of a three-aperture diaphragm which is placed over the spectrograph slit. The iron arc is exposed through the central opening of the diaphragm or slide and the two samples through the top and bottom openings. The three openings are staggered so that only one is over the slit at one time.

The iron arc is used because the wave lengths of all iron lines have been determined. The iron lines were identified by reference to an atlas[5] and to reproductions of the iron arc sold by Adam Hilger, Ltd., London, England. All the lines in the spectrogram produced by the brine samples were identified. This report, therefore, represents semiquantitative analyses of the brines for all elements except hydrogen, carbon, nitrogen, phosphorous, oxygen, sulfur, chlorine, bromine, iodine and the rare gases. Since large amounts of calcium are present, flourine would have been identified by the production of a calcium flouride band if it had been present.[6]

The results are given in Table No. 1, which represents a semiquantitative analysis. The analyses were made without the benefit of standards of comparison. The amount of elements present are estimated visually from the number and intensity of the lines due to the elements. Experience with this method has shown an average error of 100 per cent, i.e., if 50 p.p.m. is reported, the amount present will on the average lie between 25 p.p.m. and 100 p.p.m. By utilizing recently developed technic involving Gerlach and Schweitzer's "internal standards" method,[7] together with instrumental means of photographic plate calibration and evaluation, all the minor constituents in an oil-well brine could be determined with an error of 5 per cent or less.

This type of procedure is a little more accurate than the most careful chemical analysis, and cheaper, once it has been put on a production basis. The cost of the spectrograph and auxiliary apparatus is considerable, and the cost of developing the specific methods of analysis and determining the working curves is somewhat less than the instrument cost.

TABLE 2—CHEMICAL ANALYSES AND DESCRIPTION OF SAMPLES

(Results are in parts per million)

Samples—	1	2	3	4	4,109	4,110
Na and K	60,856	47,543	49,593	42,256	53,185	52,619
Ca	18,020	9,396	8,930	7,418	11,720	11,572
Mg	2,848	2,140	2,074	2,066	2,160	2,160
SO_4	nil	150	1,400	*nil	1,450	1,100
Cl	133,800	95,900	97,300	84,200	108,000	107,400
HCO_3	55	38	90	180	49	trace
CO_3	nil	nil	nil	nil	nil	nil

*Has a small amount of barium.

Sample 1—Gulf No. 5 Boucher, section 31-1n-19w, Oklahoma. Depth, 2,708-12 feet. In Arbuckle limestone. This is the deep pay of the new Tipton field and it is of Cambro-Ordovician age.

Sample 2—Gulf No. 3 W. H. Cecil, section 19-7n-4e, Oklahoma. Depth, 3,693-3,819 feet. In Hunton limestone which is of Siluro-Devonian age.

Sample 3—Gulf No. 1 LeClair, section 23-7n-4e, Oklahoma. Depth, 4,275-83 feet. In Wilcox sand which is of Ordovician age.

Sample 4—Gulf No. 12 F. Payne, section 19-20n-13e, Oklahoma. Depth, 1,190 feet. In Bartlesville sand which is of Pennsylvanian age.

Sample 4,109—Gulf No. 1 Edwards, section 3-1n-20w, Oklahoma. Depth, 1,667 feet. Horizon, Cisco lime which is of Pennsylvanian age.

Sample 4,110—Gulf No. 1 Circle, section 11-1n-20w, Oklahoma. Depth, 1,420 feet. Granite Wash which is of Pennsylvanian age.

Elements Present

The strontium in these samples is perhaps higher than has been previously realized. It is by no means a minor constituent. The potassium appears to be so low in oil-well brines that no error has been introduced by assuming that the chemical sodium determination was all sodium. But it is probable that errors have been introduced by assuming that the calcium precipitate contained negligible amounts of strontium. Chemical analysis shows that the Hunton limestone and Wilcox sand waters differ only in their sulfate content. The spectrographic analysis shows considerable difference in barium. The water having the lower sulfate has considerably higher barium. Since the sulfate analysis is sometimes reversed it may be that the barium figures would also be reversed and could not be used to differentiate the two brines. The two brines can be differentiated by analyzing them spectrographically for boron. The water from the Wilcox sand is very much higher in boron that that from the Hunton limestone. If this condition holds true over a large number of

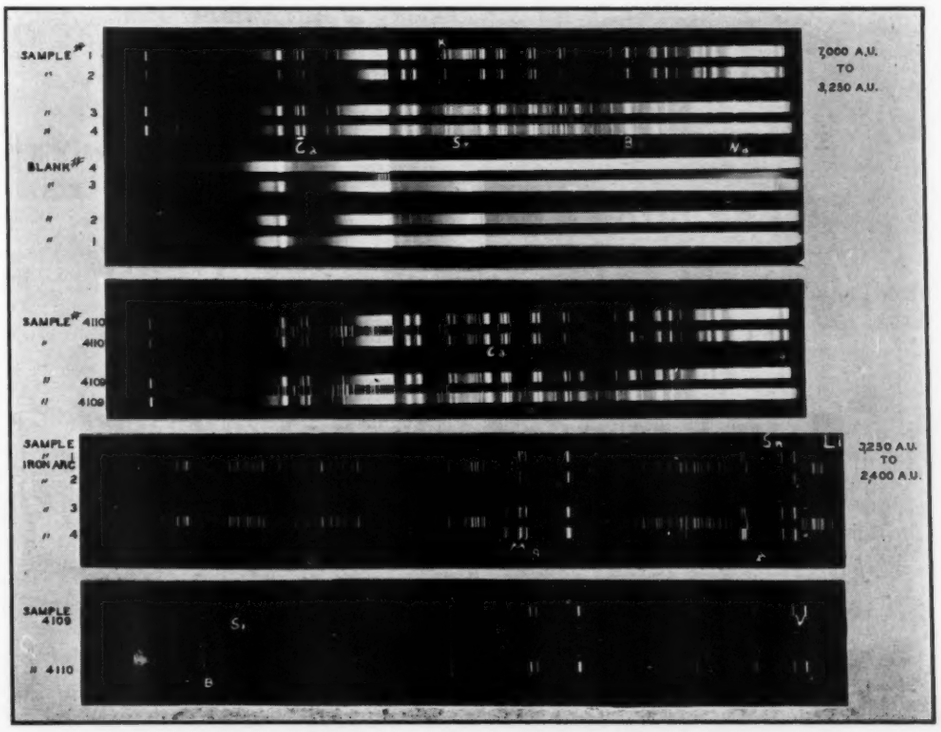

Fig. 1—Spectra produced by passing light through a quartz Littrow type spectrograph

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samples a method is available for differentiating these two brines.

Sample No. 1 is altogether different from any of the other samples both chemically and spectrographically. This sample contains the highest amount of lithium and potassium of any of the samples. The lithium is so high that this salt cannot be used for tracing ground waters of this analysis. It is interesting to note that lithium is nearly as high as potassium in five of the six samples. In many cases potassium salts would be entirely satisfactory for tracing underground water flows. This would be particularly true if the potassium contents of the brines at the various horizons were accurately known by accurate quantitative spectrographic analysis. Sample No. 4 can be differentiated from the other samples either chemically or spectrographically by the presence of considerable amounts of barium. Samples No. 4,109 and 4,110 are more closely related than any other pair; however, even if the difference in iron content is neglected, the presence of a trace of silver in sample No. 4,110 serves to differentiate it from all other brines in the series.

CONCLUSION

The preliminary work indicates that the spectrograph may be a means of distinguishing, or correlating, the brines found in or adjacent to oil formations. The application of accurate quantitative spectrographic analysis of the rare elements in the brines should find its greatest usefulness in the detection of the source of casing leaks. A large number of quantitative spectrographic analyses of oil-well brines and connate waters might bring to light new relationships which are not now indicated.

The author wishes to gratefully thank L. C. Case of the Gulf Oil Co. for furnishing the samples and chemical analyses.

[1]Subsurface Water Characteristics in Oklahoma and Kansas, L. C. Case, American Association of Petroleum Geologists, pp. 855-68, August, 1934.

[2]The Spectrographic Determination of Minor Chemical Constituents in Various Water Supplies in the United States, by Mathew M. Braidech and F. H. Emery, Journal of the American Water Work Association, Vol. 27, pp. 557-80, May, 1935.

[3]Rare Elements in Coal Ashes, V. M. Goldschmidt, I.&E.C., Vol. 27, p. 1,100, 1935.

[4]Spectroscopy, E. C. C. Baly, Vol. 1, Longmans, Green & Co., London, 1927.

[5]Atlas de Spectres D'Arc, Jacques Bardet, Gaston, Doin & Cie, Paris, 1926.

[6]Spectroscopic Detection of Flourine, J. Papish, L. E. Hoag and W. E. Snee, I.&E.C., July 15, 1930.

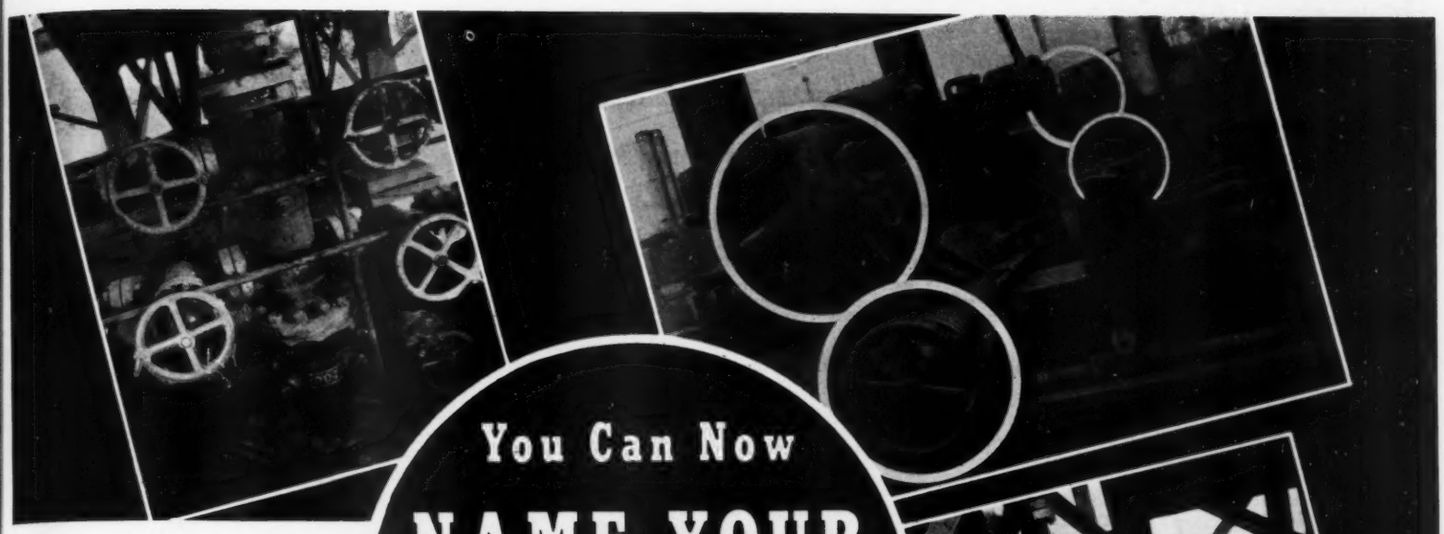
[7]Foundations and Methods of Chemical Analysis by the Emission Spectrum, Walter Geriach and Eugene Schweitzer, translation published by Adam Hilger, Ltd., London, England, 1932.

Examination of Paraffins by X-Ray Described by Muller

Dr. Alexander Muller of Davy-Faraday laboratory of the Royal Institution recently presented a paper, entitled "X-Ray Examination of Paraffin," before a London meeting of the Institution of Petroleum Technologists. The author recalled that X-ray analysis starts with Max von Laue's discovery in 1912, and is based on the fact that short electromagnetic waves, such as produced in ordinary X-ray tubes, have wave-lengths comparable with interatomic distances in organic and inorganic matter.

In crystalline materials where the atoms are arranged in well-defined three-dimensional space lattices X-rays when passing through the material produce interference patterns of striking clearness, comparable to those obtained when visible light is reflected from a ruled grating. The difference between the two phenomena lies in the fact that whereas the diffraction pattern observed with light is produced by interaction of waves coming from a surface, the X-ray effects are produced by rays coming from the material in bulk.

X-ray diffraction phenomena are observable with solids, liquids and even gases. The maximum information with regard to structure is obtained when the material is in the form of a single crystal, but the examination can also be carried out on polycrystalline or powder substances. This technique is usually adopted when dealing with paraffins or similar materials, since it is very difficult to isolate single crystals of suitable size.



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QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Classifications of Diesel Fuel Oils According to Usefulness

With reference to the "Fuel Oil For Diesel Engines" specification which you gave in The Oil and Gas Journal, October 15, 1936, you state "There are no standard specifications for engine fuel oils." Are the A.S.T.M. specifications for "Diesel Fuel Oil" standard? —B. A. E.

The A.S.T.M. does not publish specifications for diesel oils. The D-2 report of September, 1936, page 34, does suggest a classification as shown in the tables following.

DIESEL FUEL OIL CLASSIFICATION

Grade D	Flash °F. min.	W. & S. % by vol. max.	Viscosity seconds S. U. 100° F. min./max.	Carbon residue % wt. max.	Ash % wt. max.	Pour °F. max.
1.....	115	0.05	35/50	0.2	0.02	35
3.....	150	0.10	35/70	0.5	0.02	35
4.....	150	0.60	—/250	3.0	0.04	35
5.....	150	1.00	Furol at 122° F. max. 100	6.0	0.08	..
6.....	150	2.00	...	..	...	..

Sulfur—1.5 per cent max. for Nos. 1 and 3; 2 per cent for Nos. 4 and 5.

IGNITION QUALITY

	Grades No. 1-D	No. 3-D	No. 4-D
Cetane No. min.	45	35	30
Diesel Index No. min.	45	30	20
Visc. grav. No. max.	0.86	0.89	0.91
Boiling-point-grav. No. max...	188	195	200

This classification is intended to aid in differentiating types of oils suitable for diesel engines. It is not the intention of the committee that this classification should be used as purchase specifications; but rather that fuels purchased be correlated according to the proposed classification in order to determine their usefulness.

Reference: A.S.T.M. Standards on Petroleum Products, September, 1936, page 34.

Formation of Hydrogen Sulfide in Oils While in Storage

Is it true that crude oils and unfinished distillates have a tendency to form sulfides and especially hydrogen sulfide during storage?—E. H. L.

Hydrogen sulfide mercaptans and sulfides are liable to be formed when any liquid containing a sulfur compound is left standing for some time. There are many factors that may have to be considered when studying a reaction of this type. Sulfides are sometimes produced in the presence of acid, at other times when the liquids are alkaline. Sulfates are frequently changed to sulfides and free sulfur will gradually unite with a metal to form the sulfide. Probably the most frequent cause for the slight decomposition of petroleum oils is the presence of water in the tanks. These waters are usually quite complex but sulfates and sulfides are common constituents.

The presence of sulfides aids in the formation of iron sulfide, sometimes this material absorbs oxygen with great rapidity, resulting in sufficient heat to cause fires and explosions. A recent investigation of an explosion of a gasoline tank in England suggested that certain sulfate-reducing bacteria live in sea water and that they can continue to live in salt water stored under gasoline or oil. They reduce sulfate and form hydrogen sulfide. On the possibility that iron sulfide had been formed, which generates heat when it is exposed to the air, samples of scale were taken from various parts of the tank. A portion of the casting from the king-post contained the largest amount of sulfide sulfur, that is, 0.46 per cent. The sulfide was probably in the tank before the explosion.

Light hammer blows on the bottom course of shell plates in an inspection to determine whether the tank could be repaired produced sparks, one of which increased in size and brightness for about two seconds and then diminished slowly and disappeared. The tap of the hammer may have occurred in tanks at two other places shortly after workmen had removed manhole covers.

Reference: Spontaneous Ignition of Iron Sulfide, as a Cause of Oil Fires, Pet. Times, 36, 619, 1936.

Preparing Standard HCl Solution

Will you please give me a simple method for standardizing an HCl solution?—R. K. G.

One simple method is to titrate a small measured quantity of HCl, well diluted with distilled water, against a standard solution of $AgNO_3$ in the presence of two or three drops of potassium chromate solution.

A gravimetric method is to warm the measured and diluted HCl, then add an excess of $AgNO_3$ solution, bring to boiling. Filter onto a weighed Gooch asbestos filter, wash with water, dry and weigh. Calculate the HCl equivalent from the weight of the silver chloride.

Pure HCl solution at its boiling point contains 20.242 per cent HCl. This fact serves for preparing the standard solutions. The concentrated pure acid is distilled, the first 30 ml. discarded and the distillate placed in a glass-stoppered bottle. A portion is titrated against fifth normal N_aOH solution, with methyl orange or any suitable indicator. N/5 N_aOH=0.0072836 gm. HCl per ml.

SPECIFICATIONS

NAVY FUEL OIL

The Navy Department has recently revised the specifications for Fuel Oils as outlined in the table. Grade 1—Navy fuel oil. Grade 2—Bunker "C" fuel oil.

Test—	Fuel oil grade (1) Limits	(2)
Flashpoint, closed °F. min.	150	150
Firepoint, closed	220	.....
Vis. S S F at 122° F. max.....	65	300
Ash, % max.	0.12	.....
Water (distn.) % max.	0.50	1.0
A.P.I. gravity min.	10.0	.....
Pourpoint upper °F. max.	50.0	.....
Carbon residue	1.50	.....
Sediment extraction, after refluxing % max.	0.12	.....
B.s.&w. centrifuge, after refluxing % max.	0.50	.....
Sediment, extraction % max..	.....	0.25

Shall be a hydrocarbon oil free from grit, acid, and fibrous or other foreign matters likely to clog or injure burners or valves.

Reference: Navy Department Specification, 7-0-1e, Oct. 1, 1936.

Underground Production of Oil and Cracking in Place

Some years ago it was suggested that power might be developed by burning coal in place as found underground. Has anything of this kind been attempted with oil?—E. N. S.

During the past year a report appeared in the Oil News indicating that Soviet scientists, favorable results having been obtained from investigations, had established a plant in the Staro-Grosny district in the Caucasus for obtaining oil by thermic methods and the underground gasification of oil.

The intention appeared to be to devise a method which would improve on the air, gas and water-drive methods. The Soviet scheme is outlined as follows:

"Gas, heated to a temperature ranging from 600° to 650° C., is forced into the well at a pressure of 18 atmospheres. Thereby the oil is ignited in the strata and combustion is maintained by constantly pumping in air. With a temperature of 1,400° to 1,500° C., the oil is separated from the sand and pushes through to the wells, and is pumped out in a liquid state or comes out of itself as a gas, which is then refined into oil products.

"The advantage of the thermic method and underground gasification lies in the fact that they do not require a great deal of capital expenditure. The old wells, through which the oil was previously pumped out, and compressors are quite suitable for the new method of obtaining oil and gas. In addition to the Grosny, Maikop and Chusovsk oil fields, this work will also be carried out in the Stalin and Lenin oil fields at Baku."

Reference: Oil News 40, 72, 1936.

Meaning of Numerals Used When Marketing Natural Gasoline

I desire some explanation of the meaning of the grades for natural gasoline mentioned each week in The Oil and Gas Journal. Under f.o.b. Group 3 and others are "Grades 26-70" and under California there are "75-85 and 375-390." Do these first figures refer to vapor pressure or octane rating? Why is there so much difference between the California gasoline and the others?—F. H. A.

The Natural Gasoline Association of America adopted specifications, which became official January 1, 1932, for natural gasoline. These are primarily based on maximum vapor pressure in pounds, as determined by the Reid Method, and the quantity, in per cent, evaporated during the distillation test at 140° F. The scheme provides for 24 grades, of which the 26-70 is the best known. Here 26 refers to 26 pounds vapor pressure, the maximum permissible, and 70 means that a minimum of 70 per cent of the product will vaporize at 140° F. on distillation.

The California natural gasoline is specified by A.P.I. gravity range and a minimum and maximum endpoint on distillation. Therefore, the complete statement for the grade mentioned would be: A.P.I. gravity, 75 to 85, inclusive, and an endpoint not lower than 375° and not above 390° F.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired postage should be enclosed.

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PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Formula for Estimating Natural Gas Reserves in Place

If any fairly accurate method of estimating natural gas reserves has been devised I would like to know what it is. There seems to be a wide variety of views. Estimates made on the same field by engineers of recognized ability will be so far apart that they seem to have no relation to each other at all. Not only that, but these engineers are supposed to be using the same method of computation. In my own work I have estimated, but they always prove high. Can you tell me what the best practice in this field of engineering is?—F. D. E.

It is possible that engineers will not arrive at the same results in estimating gas reserves but this difference is usually easy to explain if the factors used are checked. Regardless of past experience the following formula used by the engineers of the U. S. Bureau of Mines is now regarded as satisfactory for appraisal of gas in place:

$$Q = (43{,}560\,Ats)\left(\frac{460+60}{460+T_f}\right)\left[\left(\frac{P_f}{14.4}\right)\left(1+\frac{N_f}{100}\right)-\left(\frac{P_a}{14.4}\right)\left(1+\frac{N_a}{100}\right)\right]$$

Q = cu. ft. of gas at temperature of 60° F. under a pressure of 14.4 lbs. per sq. in.
43,560 = acre reduced to sq. ft.
A = productive area in acres.
t = thickness of producing member in ft.
s = effective porosity in per cent (decimal).
T_f = temperature in producing formation, °F.
P_f = absolute formation pressure in lbs. per sq. in.
N_f = per cent deviation of gas from Boyle's law at pressure P_f.
P_a = absolute abandonment pressure in formation, lbs. per sq .in.
N_a = per cent deviation of gas from Boyle's law at pressure P_a.

This formula was used by Bureau of Mines engineers in making report on Oklahoma City field published as R.I. 3,217, June, 1933, as well as in numerous other calculations of this kind.

Hoisting Speed for Rotary Rig

We have a converted steam rotary drilling rig driven by gasoline motor. On the drawworks line shaft there is a 13-inch 12-tooth sprocket driven through chain drive from a 30-inch 32-tooth sprocket on rear assembly of Fordson tractor. The rear shaft of the tractor is driven by differential from gasoline engine and controlled through clutch system. There are two shift systems, one on the Fordson and the other on the gasoline engine.

Would more power be developed and the line shaft run faster with less gasoline engine speed if the smaller sprockets were reversed and placed on the Fordson assembly shaft and the larger sprocket placed on the line shaft of the drawworks? We have excess power but wish to reduce the engine speed without loss of speed while drilling.—R. E. G.

From your question we are not entirely clear as to how you have arranged this hook-up. Do you have a gasoline engine in addition to the power unit in the Fordson? You mention a "two shift system—one in the Fordson and the other on the gasoline engine" and fail to give us either horsepower or speed of the engine.

It is learned that the Fordson tractor may be powered with either a 20- or 30-horsepower motor running at 1,100 r.p.m. full speed. This machine has a rated speed of 7¾, 3⅛ and 1⅔ miles per hour and we have calculated these speeds with 42-inch diameter rear wheels which will give the rear shaft speeds of 62, 25 and 12 r.p.m. respectively.

If the engine is running at full speed and the rear shaft has a speed of 62 r.p.m. with the 30-inch sprocket driving the 13-inch sprocket on the drawworks the speed of the drawworks shaft will then be:

$$\frac{30\times 62}{13} = 142 \text{ r.p.m.}$$

If the two sprockets were reversed with the 30-inch sprocket on the drawworks and the 13-inch sprocket on the assembly of the Fordson the drawworks shaft speed would be:

$$\frac{13\times 62}{30} = 26.8 \text{ r.p.m.}$$

With the second speed the drawworks shaft speed would be 57.5 r.p.m. with the 13-inch sprocket on the drawworks shaft or 10.8 r.p.m. if the 30-inch sprocket is placed on the drawworks shaft.

At slow speed the drawworks speeds would be 27.7 and 5.2 r.p.m. respectively.

Regardless of the speed of the shaft in the assembly in the Fordson tractor the relations of driver to driven sprockets will be as 30 is to 13 as now hooked up and as 13 is to 30 if the large sprocket is placed on the drawworks. To find drawworks speed multiply the size of the driver by the r.p.m. of the shaft on the rear of the Fordson tractor and divide by the size of the driven.

Your problem in hoisting can only be solved by determining horsepower required to lift any given load at a known speed. The load is in pounds and the speed in feet per minute. To determine the hoisting speed it is necessary to know the diameter of the drum on the drawworks. When the hoisting speed is known horsepower can be determined by multiplying gross weight in pounds by speed in feet per minutes and dividing by 33,000 foot pounds per horsepower. To allow for mechanical efficiency it is usually considered good practice to use 28,000 foot pounds per horsepower in calculations of this kind or 85 per cent of 33,000 foot pounds.

Assuming the load is 1,000 pounds and the speed 200 feet per minute the horsepower would then be:

$$\frac{1{,}000\times 200}{28{,}000} = 7.15 \text{ h.p.}$$

Supposing the load is unchanged but the speed of hoisting is increased by 50 feet per minute then horsepower would be:

$$\frac{1{,}000\times 250}{28{,}000} = 8.93 \text{ h.p.}$$

Changing the ratio of the sprockets on driver and driven shafts will not effect the horsepower demand on your engine unless you reduce the load or hoisting speed or both.

If this does not answer your specific problem please give us more details regarding the hook-up and we will be glad to check further.

Use of Air-Gas Lift in Limestone Fields Not Recommended

Would you recommend the use of gas-lift in the Hobbs field, New Mexico, after natural flow has ceased? If not, what other method could be used for handling a large quantity of oil and water?—W. W. S.

Gas-lift could probably be used to advantage for a period in the Hobbs field if there were no restrictions on the quantity of oil produced per well. The life of gas-lift might be comparatively short, but the very large quantity of fluid produced under such conditions would probably yield a large profit over installation and operating costs.

The Hobbs field is severely restricted, as you are aware, and most of the wells are flowing naturally. With the open, porous formation in this field, restricted production might even approach the present condition in the Hendricks field, Winkler County, where the field is almost depleted, and yet oil is being produced from some wells mixed with a heavy artesian flow of water.

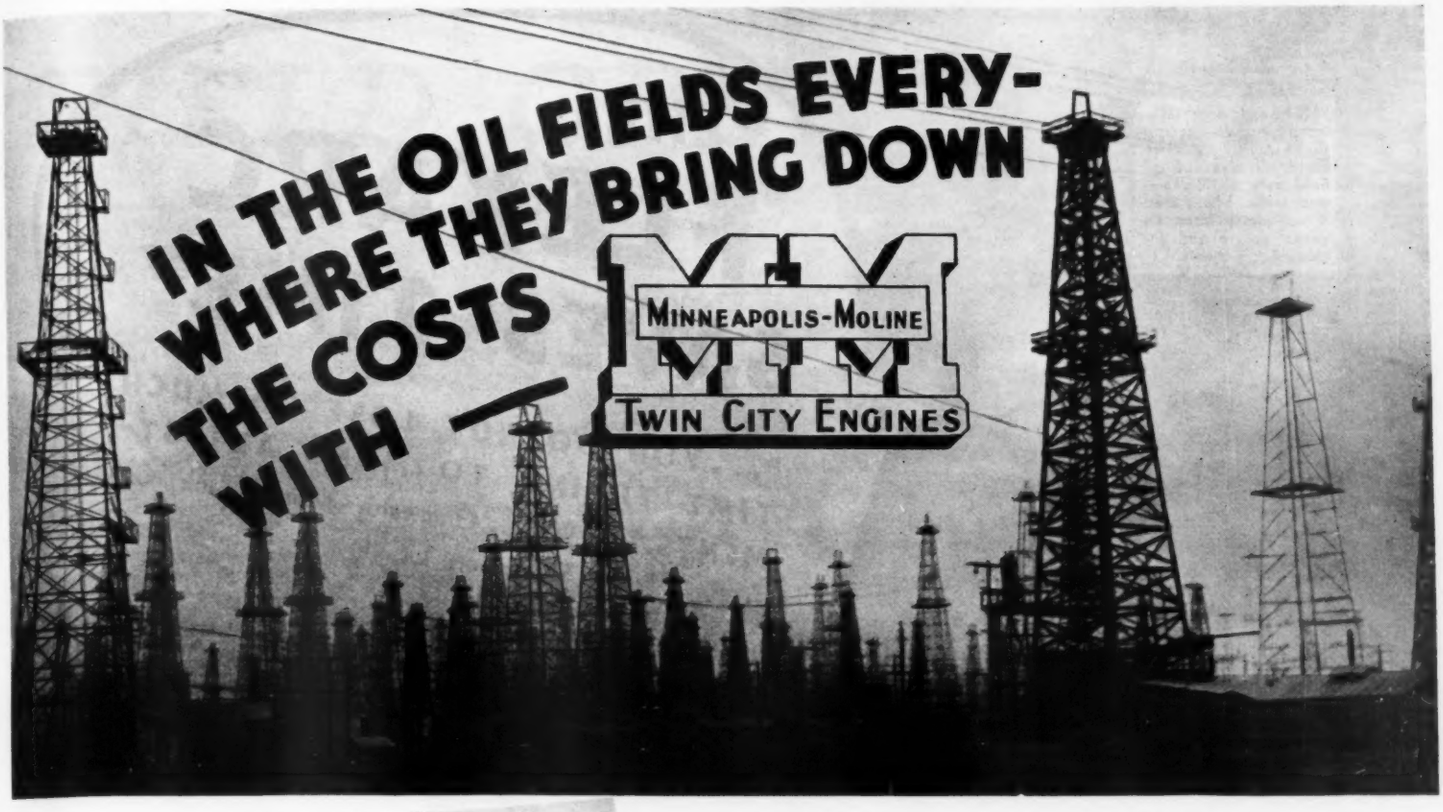
The reservoir in the Hobbs field is a porous limestone, under which condition, the later life is one usually accompanied with considerable water. In these limestone fields, hydrogen sulfide is usually present in appreciable amounts. When water begins to encroach and is accompanied by hydrogen sulfide, corrosion troubles are severe, and under these conditions it is doubtful whether it would be advisable to attempt to handle the production by means of gas-lift. The corrosive action is usually considerable accentuated when air or gas-lift is employed.

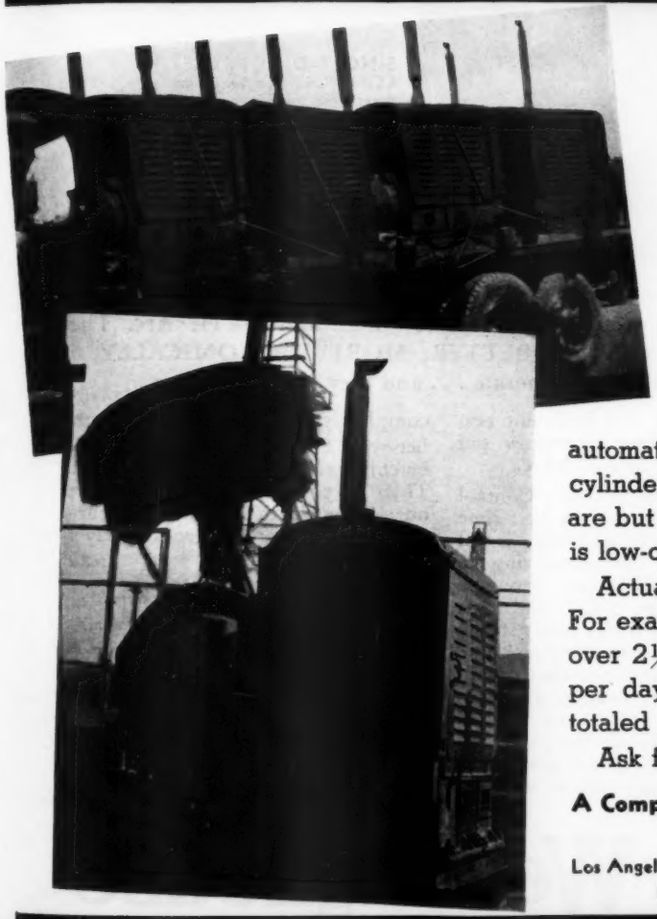
The air-lift was tried out at Luling, which field is a limestone reservoir, and in which much hydrogen sulfide is present. The efforts were unsuccessful to employ air-lift, owing to severe corrosion troubles and to emulsification of the oil and water. The tubing and casing was corroded to destruction in a short time.

The gas-lift was employed at Church Fields pool to some extent, but not for a long period, although the troubles were less severe than in Luling.

The sucker-rod pump can be employed in such a field, and corrosion troubles are less severe than when the gas-lift is employed, but the capacity is limited when using this method. Under restricted production, the beam pump can probably handle the lifting satisfactorily in such a field.

If it becomes necessary to lift a very large quantity of oil mixed with water, containing hydrogen sulfide gas, the possibilities of using the submerged electric-driven centrifugal pump should be considered. The first cost of this equipment is rather high and maintenance may cost considerable, but it is quite possible the cost per barrel lifted, taking everything into consideration, may be kept lower than any other artificial lifting method known at this time.





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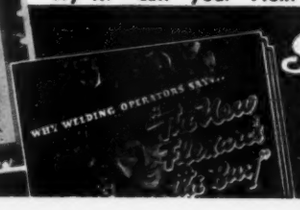

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FIELD OPERATIONS

Summarizing the Week's Developments

The Buckeye field in Gladwin County, Michigan, is the sensation of the year in that state. A 2,000-bbl. well completed over the week end added to the 8,000 bbls. per day produced by six earlier completions, stamps that field as a rival to the older Porter-Yost field in Midland County.

OKLAHOMA

The Britton pool, Oklahoma County, Oklahoma, was extended southeast toward Britton townsite by a 5,392-bbl. well. Earlier in the week an 8,096-bbl. well was completed on the north side of this pool. A wildcat in Pawnee County was showing oil in Bartlesville sand, and a Lincoln County wildcat was showing oil in Wilcox sand. Eight producers were completed in the Olympic pool.

KANSAS

A 3,084-bbl. well, largest in the Weathered pool, Cowley County, Kansas, was completed. Siliceous lime production was uncovered with a 1,550-bbl. well in the Walter pool, other production in the pool being from Topeka lime. Wildcats in Sedgwick and Rice Counties gave promise of opening new areas.

TEXAS

The East Texas field has thus far been drilled one well to about 5 acres, with no let up in sight. Forty oil wells were completed last week and 109 are drilling. Most of Talco's completed wells are on the pump but Sulphur Bluff wells producing from the same formation are all flowing.

Ninety locations were staked in West Texas, a new record for a week. A wildcat in Andrews County flowing oil and wash water on a test may have opened a pool, or extended the Means or the Deep Rock pool. The Cowden field in Ector County was extended by a well that flowed 161 bbls. of oil in six hours while clearing itself of mud.

In Southwest Texas another producing field looms in Nueces County, southwest of the recently opened London field.

Developments in the Texas Gulf Coast were routine, but the Louisiana side of the Coastal division has a new pool in Terrebonne Parish and what looks like a discovery in Jefferson Davis Parish. The Terrebonne wildcat started at 875 bbls. per day. The Jefferson Davis test blew out and ran wild for several hours, after tapping a gas sand at 9,137 feet.

LOUISIANA-TEXAS

Three saturated-gas areas were opened in Webster and Bienville parishes in North Louisiana, all producing large volumes of wet gas from the Travis Peak section of the Trinity series. There were no completions in the Caddo Parish side of Rodessa, but six wells were added to the Cass County side in Texas. The wildcats in the Jefferson area in Marion County were still in the incomplete stage. A Travis Peak test is to be drilled in the old Caddo field by deepening an old Pettitt sand well.

ROCKY MOUNTAIN AREA

In Northwestern Colorado the second well on the Powder Wash structure started at the rate of 840 bbls. a day. An important deep test in the Baker area in Fallon County, eastern Montana, was dry and abandoned at 7,360 feet. The best new well in southeastern New Mexico started at 200 bbls. per hour. It is in the Monument field, Lea County.

Completions in All Fields

(Week Ending February 27, 1937)

	Oil	Gas	Dry	Total	1937 total comp. to date	1936 total comp. to date
Penna. Grade Fields	57	13	9	79	544	410
Lima Field	2	0	1	3	12	11
Central Ohio	0	6	5	11	135	42
Indiana	0	0	0	0	26	28
Kentucky	4	0	1	5	22	25
Illinois	0	0	0	0	1	7
Michigan	7	5	3	15	123	103
Kansas	24	2	2	28	302	204
Oklahoma	39	1	14	54	399	367
Texas:						
North Central Texas	19	1	19	39	391	373
West Texas	44	0	7	51	374	182
Texas Panhandle	9	5	0	14	100	108
East Central Texas	4	0	6	10	97	40
East Texas	40	0	2	42	337	431
East Texas border	6	0	0	6	75	2
Gulf Coast Texas	22	0	5	27	192	155
Southwest Texas	41	1	10	52	528	328
Total Texas	185	7	49	241	2,094	1,619
North Louisiana	0	1	6	7	63	95
Gulf Coast Louisiana	7	1	8	16	74	52
Total Louisiana	7	2	14	23	137	147
Arkansas	1	0	3	4	14	17
Montana	0	0	1	1	13	16
Wyoming	0	0	0	0	15	12
Colorado	1	0	0	1	4	5
New Mexico	13	2	1	16	115	64
Utah	0	0	0	0	0	1
California	16	0	12	28	211	179
Total United States	356	38	115	509	4,167	3,257
Total previous week	357	41	102	500		
Difference	1	3	13	9		

Outstanding Fields—Highlights

(Week Ending February 27, 1937)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Anahuac	3	4	3	1,521	154	12,217
Hastings	3	9	4	2,476	143	11,867
Loma Novia	2	4	3	280	662	15,850
Seven Sisters	3	3	2	670	377	8,780
Saxet	3	33	5	680	384	26,290
Lopez	3	3	3	960	289	7,010
East Texas	41	109	40	1,735	22,189	455,497
Talco	11	40	3	505	210	18,000
OKLAHOMA						
Oklahoma City	4	24	4	3,778	1,098	140,058
Fitts	6	68	5	2,375	632	90,175
Burbank-S. Burbank	1	2	1	146	2,165	23,500
KANSAS						
Ellis County	6	15	1	439	80	3,415
Reno County	6	31	1	145	367	20,175
Russell County	8	52	7	9,743	592	24,910
Rice County	15	60	6	3,540	709	44,015
NEW MEXICO						
Lea County	13	95	11	1,690	2,041	94,800
LOUISIANA-TEXAS						
Rodessa, La.	3	15	0	0	349	48,730
Rodessa, Tex.	12	42	6	2,250	211	38,530
Gillis, La.	2	4	0	0	58	16,212
Tepetate, La.	2	2	2	140	41	5,673
MICHIGAN						
Porter-Yost	5	4	0	0	429	13,166
Crystal-Montcalm	5	7	0	0	149	3,023

Southwest Texas District

SEABOARD TEST IN NUECES PROSPECTIVE POOL OPENER

By
GEORGE WEBER

CORPUS CHRISTI, Tex., March 1.—Nueces County continued to hold the spotlight in southwest Texas during the past week, as indications pointed to another producing field within its bounds. The discovery, a short distance southwest of the newly opened London field, may mark the opening of the county's ninth oil pool. Besides activity which made news in other fields of the same county, important developments took place throughout the southwest Texas area. In the Laredo district, oil production was opened in the Labbe gas field, marking an important discovery in northern Duval County. Good completions in the Colmena field in the same county drew attention there, and drilling in the new Sweden field, also in Duval, was augmented by another test.

The outstanding wildcat of the week, Seaboard Oil Corp. and Allen No. 2 Chapman showed results on a drill stem test which indicate the discovery of an important new area in Nueces County. The test first cored sand showing oil at 6,464-71 feet. A drill stem test taken at 6,462-71 feet recovered 1,080 feet of pipe line oil in 10 minutes. Using three-eighths inch top and quarter-inch bottom chokes, and a water cushion of 930 feet, the test showed a working pressure of 20 pounds. The sand body was then cored to a depth of 6,483½ feet, showing 19½ feet of saturated sand. The operators cored through the sand without hitting water sand, and logged shale from 6,483½ to 6,507 feet. The test is reported to have been carried to a total depth of 6,532 feet, encountering more sand. The crude recovered on the drill stem test showed a gravity of 42 degrees.

Although the wildcat is only 9,000 feet south-southwest of the Wellington Oil Co. No. 1 Stockton, discovery well of the London field, the general opinion is that it marks a separate structure. The Wellington well was drilled to a total depth of 7,005 feet and plugged back to several successive sands that had shown production possibilities before it was completed in the 4,698-4,703 foot horizon. It is not expected that the new discovery will bring a great amount of leasing activity, as most of the acreage in the vicinity has already been taken up.

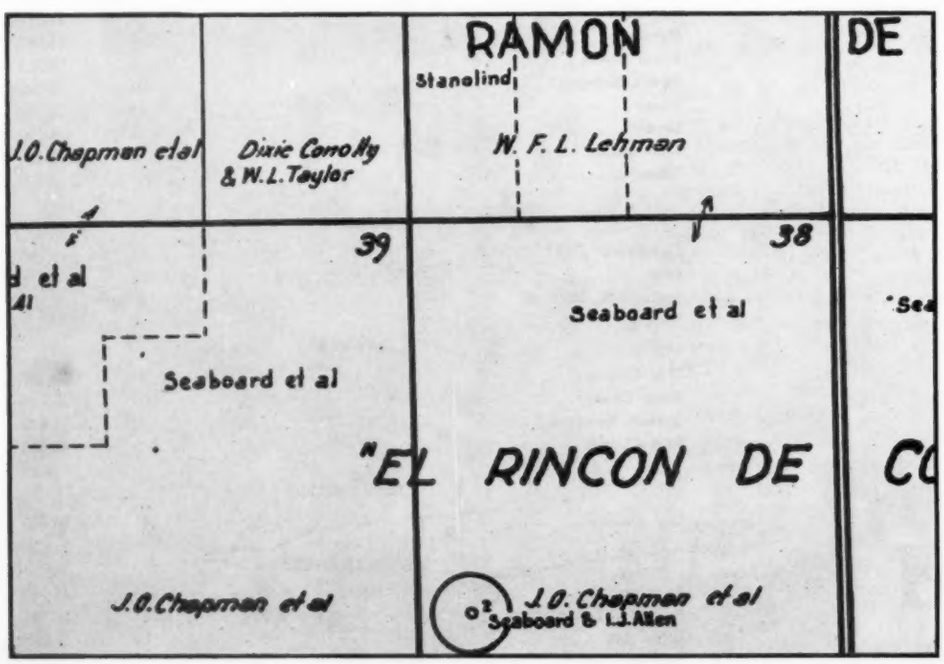
The Seaboard Oil Co. and Allen drilled two other tests in the general vicinity of the new discovery. No. 1 Chapman in section 80 and No. 1-A Chapman, section 40, a workover of an old test. The operators hold leases on 5,000 acres of the Chapman ranch in the section.

Sullivan Field Outpost

In the same county, Lockhart Brothers of the Invincible Oil Co. are attempting to complete an extension of the new Sullivan field south of Agua Dulce. Their No. 1 Elliff, located in a 3,055-acre tract, 1 mile south of the Texon Drilling Co. No. 1 Elliff, perforated casing at 6,410-20 feet. The test was cleaning into pits at latest reports and showing for a high pressure distillate producer. The Texon well to the north, which was the discovery well of the field, has blown out together with the same operator's No. 2 Sevier, and both tests are cratered. The Invincible well, if completed, will extend the field 1 mile.

Deep tests continued to draw the most attention in the Saxet field, as one indicated an extension to the 6,700-foot sand. Sand cored at 6,741-52 feet in the Ben-Tex Oil Co. No. 2 Frank Harmon, and casing has been set, for a completion attempt early this week. If successfully brought in, the test will mark a 2,000-foot northeast extension to the sand in the field.

Another test on the 6,700-foot sand is H. H. Howell No. 2 Hutchins in Survey 416. This test cored the sand at 6,711-28 feet and has set casing on bottom. Phillips Petroleum Co. has passed the 6,700-foot sand and is coring below 6,800 feet. In the north edge of the field Oso Drillers, Inc. plugged back successively to several sands from a total depth of 7,218 feet in No. 4 Roark but without success. They were recementing perforations at 4,281 feet at latest reports.



Outstanding development of the week in Southwest Texas was the test of oil in Seaboard Oil Co. and J. I. Allen No. 2 Chapman indicated by the heavy circle. Sand at 6,464-71 feet showed a recovery of 1,080 feet of pipe line oil before the operators cored deeper to find a 19½-foot sand body, from 6,464-83½ feet.—(Porter Regenold Maps, Corpus Christi)

Saxet Heights

Lying immediately to the east, the Corpus Christi or Saxet Heights field gained several new producers during the week, and activity in that field is showing a slight increase. Flour Bluff, the important new production area on a peninsula between Laguna Madre and Oso Creek is being steadily extended as six rigs, drilling for Humble, Barnsdall and Hurlburt add new completions. Twelve new locations were announced for the field during the week.

The Clara Driscoll field in western Nueces County experienced setbacks, as the Blanco Oil Co. No. 1 Gandy was abandoned at 7,308 feet. The test found several showings, notably at 5,642-63 feet and 6,630-34 feet. H. M. Reed has temporarily abandoned No. 1 Holloway, after failing to make a well in the 3,900-foot sand. The London field will again be active, as Cosner & Cosner move in on No. 1 Stockton, a southwest diagonal offset to the discovery well, which they began.

Wildcat Progress

Elsewhere in the Lower Coastal area, several important wildcats are drilling, while others get under way. In the Lamar Prospect, Aransas County, Barnsdall Oil Co. No. 1 Edwards has ceased flowing. The test which blew out from a total depth of 7,996 feet last month, was shut in by means of a choke on the drill stem. The pressure built up to 2,300 pounds and when the choke was opened, the test started showing oil. On a three-eighths inch choke, a flow of 12 bbls. of 44 gravity crude was gauged in 14 hours under a working pressure of 1,700 pounds. The test continued to make increasing amounts of salt water until it ceased to flow. The flow consisted of 98 per cent salt water when the pressure had dropped to 140 pounds. Offsetting this test, the Barnsdall Oil Co. No. 2 Edwards is drilling below casing set at 1,408 feet.

Laredo District

An important development in the Laredo district was seen in the Magnolia Petroleum Co. No. 2 Labbe Ranch. The north outpost test to the Labbe gas field of northern Duvall County was completed, making 35 bbls. per day on a pump. Located a mile north of gas production in Labbe, and about 3 miles northeast of oil production in the Seven Sisters field, the discovery attracts attention to the northern section of Duval County, and further drilling is expected. No. 2 Labbe was plugged back to 2,908 feet from a total depth of 3,249 feet. Two months ago the same operators completed No. 1 Labbe in section 221 for a gasser, after encountering oil shows.

Two completions in the Colmena field added to its value during the week, as Wellington Oil Co. brought in Nos. 1 and 2 Duval County Ranch Co. No. 2 gauged 216 bbls. per day. In the Sweden field, newly opened deep pool south of Benavides, two offset tests are drilling, and further locations are being staked. The discovery is the most im-

(Continued on Page 86)

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OPEN FIELD IN TERREBONNE PARISH IN SOUTH LOUISIANA

By
F. L. SINGLETON

HOUSTON, Tex., March 1.—The confirmation of a new oil field in Terrebonne Parish and the apparent discovery of another field in Jefferson Davis Parish in Coastal Louisiana were the outstanding developments along the Gulf Coast the past week. On the Texas side interesting developments included the testing of a well on the Big Hill dome in Jefferson County and the completion of a second well in the South Cotton Lake area in Chambers County.

What seems to be the most important discovery along the Louisiana Coast in several months, was the completion of a prolific oil producer by Shell Petroleum Corp. at the Bayou Cocotriz Prospect in northern Terrebonne Parish which is flowing 873 bbls. of 37 gravity oil per day through a quarter-inch choke with tubing pressure 1,700 pounds and casing pressure 1,600 pounds.

This well, No. 1-B Realty Operators is producing from 32 feet of Miocene sand at 9,493 feet and was completed February 25 after the hole had been washed for 2½ hours. It is the second deepest producing field in the district and its characteristics are very similar to those of the Lafitte field to the west in Jefferson Parish, producing from numerous sands at 9,400 to 10,000 feet.

No. 1-B Realty is situated about 14 miles west of the town of Houma and 4 miles north of Gibson in section 19-17s-15e. It is the second deep test drilled on an original block of 22,500 acres controlled by Barnsdall Oil Co. which gave a half interest to the Shell Petroleum Corp. for one free well. The first test, No. 1 Realty Operators, was on the Houma Prospect, several miles to the southeast and was abandoned last year at 10,155 feet. Geophysical work by Barnsdall and Shell indicates that the Bayou Cocotriz structure may cover from 4,000 to 5,000 acres.

The field is situated near Black Bayou making it an ideal location for water transportation. The oil is being moved by barge via this bayou and the Intracoastal Canal to the Shell Petroleum Corp. refinery at Norco, near New Orleans. Plans are now being made for the development of the structure and location for a second well is expected to be announced this week.

Deep Structure Found

Another deeply seated structure was apparently uncovered at the China Prospect in Jefferson Davis Parish when Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 Calcasieu National Bank blew out and ran wild for several hours after topping a gas sand at 9,137 feet. The hole bridged, causing the drill stem to become stuck, which will probably require several weeks' work before a test can be made. Before the gas sand was encountered, sand showing oil was topped at 8,965 feet and was cored to 8,975 feet. As no protection casing has been run, the task of getting the hole in shape will be extremely difficult. This prospect is situated about 7 miles west of the Tepetate field, centering around section 28-7s-3w and is said to be located on a geophysical high extending in a southwest-northeast trend in which several structures have been found.

New Iberia Completions

Two completions were reported for the New Iberia field, Iberia Parish, William Helis No. 6 Bernard in section 54, flowed 580 bbls. per day through a quarter-inch choke from a depth of 4,562 feet while Texas Co. No. 4 B. Hanzen in the same section, flowed 607 bbls. per day through a quarter-inch choke from a depth of 4,755 feet.

Pan American Production Co. No. 2 Laws Realty Co. extended the Charenton field, St. Mary Parish, 1,000 feet to the south and west when it flowed 323 bbls. per day through a 12/64-inch choke with tubing pressure 1,750 pounds and casing pressure 1,750 pounds. The same company's No. 1 South Coast Corp. is still shut down at 6,934 feet due to high water. Location has been made for No. 3 Laws Realty Co., 1,766 feet north and 467 feet west of the southeast corner of section 25-13s-9e. To the west in the Jeanerette field, Herton Oil Co. No. 7 Banta flowed 830 bbls. per day through a quarter-inch choke from a depth of 6,646 feet, while the south extension test of Teche Oil Co. No. 1 Matilda Plantation in section 70 was abandoned at 7,269 feet after a five-minute drill stem test at 7,240-69 feet showed salt water and drilling mud.

D. D. Oil Co. No. 1 Lutcher Moore, located on the Starks Prospect, Calcasieu Parish, in section 1-8s-13w is shutdown at 7,010 feet after an electrical coring test showed nothing of importance. It is reported that while the operators were circulating at this depth, the drilling mud began to show a slight trace of oil, cut with gas. The hole is bottomed in the Vicksburg, topped at 6,728 feet.

At the old Fausse Point dome, Iberia Parish, Texas Co. No. 2 State in section 35-11s-8e was being watched with interest after it began to make 12-bbl. heads of 34 gravity oil every 2 hours. This is the first test drilled on this old dome in several months and it is being tested through perforated casing at 6,303-6,553 feet. The hole was originally drilled to a depth of 7,157 feet and was plugged back after salt was encountered at 7,151 feet. This dome was discovered in 1927 and out of 23 wells drilled, only three have produced. However, no production has been recovered since 1928.

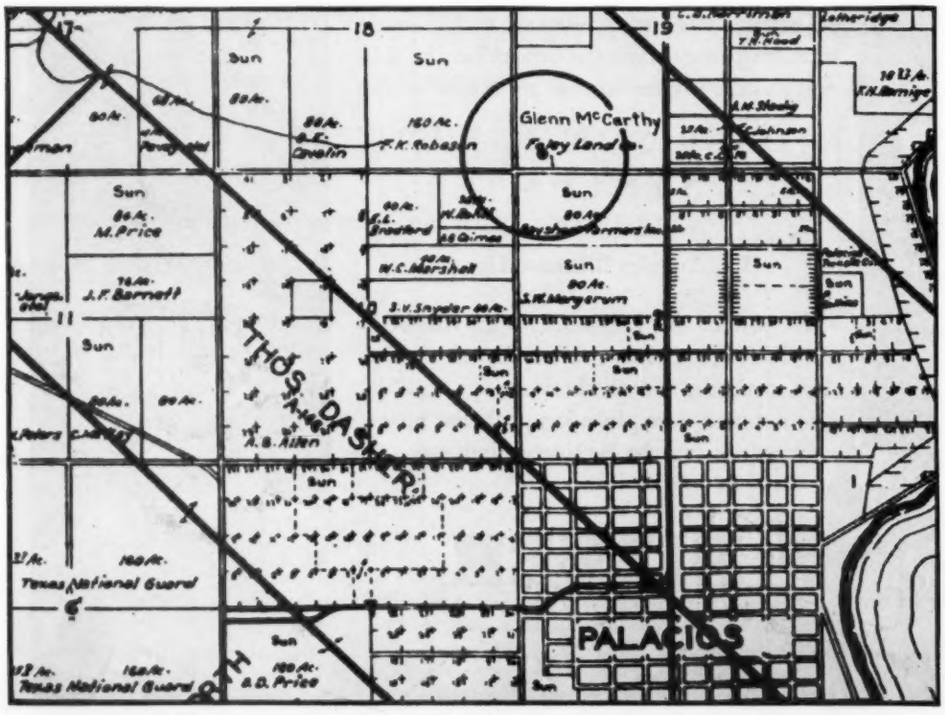
After flowing gas, oil and salt water, Superior Oil Producing Co. No. 2 A. Savoie located at the Cankton field, St. Landry Parish has been plugged back to 5,650 feet preparatory to testing. It was originally tested through perforated casing at 5,855-88 feet.

On the Texas Side

Prospects of opening commercial production at the Big Hill field, Jefferson County, were holding attention along the Texas Coast, as Stanolind Oil & Gas Co. prepared to test No. 1 May E. Fitzhugh located on the south flank of the dome in the William McFaddin Survey. The hole is bottomed in oil sand at 4,927 feet and 7-inch casing has been cemented at 4,913 feet. Development of this salt dome structure dates back to 1923, when several small producers were completed at depths from 1,700 to 1,800 feet. Numerous deep tests were drilled by the old Yount Lee Oil Co. and recently by Stanolind Oil & Gas Co., but all have been abandoned due to a thick section of heaving shale. The present test is located southeast and southwest of the other deep test and will open considerable acreage should it be productive.

Salt Dome Oil Corp. No. 1-B Lawrence, located about 3 miles south of the Cotton Lake field in the S. Barrow Survey, Chambers County, perforated casing at 6,497-99 feet and for the first six hours ending February 23, it flowed 58 bbls. of 32 gravity oil through a three-sixteenths inch choke with tubing pressure 2,250 pounds and casing pressure 2,000 pounds. The well was shut in shortly afterward to check the chokes and the pressure on the casing and tubing increased to 2,300 and 2,100 pounds. When it was opened again through a three-sixteenths inch choke it began to flow clear distillate of 48 gravity. On a 24-hour gauge ending at

(Continued on Page 82)



Glenn H. McCarthy No. 1 Foley, a wildcat in Matagorda County, Texas, which is being watched with interest.—(W. W. Zingery Maps, Houston, Texas)

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Among Gulf Coast Drilling Contractors

Smith & McDannald are moving their rig from the Conroe field in Montgomery County to the Long Lake field in Anderson County for the Texas Co., and are rigging up in the Mauritz field in Jackson County for Shell Petroleum Corp. No. 1-B Mauritz. Surface casing has been cemented in a projected deep test in Jefferson Davis Parish for Stanolind Oil & Gas Co. No. 1 United Life & Accident Insurance Co. In the meantime progress continues in the Dickinson field with two rotaries drilling for Pure Oil Co. One well is drilling in the South Houston field for Stanolind Oil & Gas Co.; one at Hastings for the South Gulf Oil Corp.; two at Long Lake for Tide Water Oil Co.; one at Jennings for Shell Petroleum Corp. and one in the Sorrento field for the Pan American Production Co.

Nicklos Drilling Co. is nearing the pay in the newly discovered Valentine field in Lafourche Parish on Pan American Production Co. No. 2 Harang, which is below 6,868 feet, while the same company's No. 3 Harang is digging ahead below 2,925 feet. Two rotaries are active in the Tepetate field for the Continental Oil Co. on the Homeseekers Development Co. and P. O. Johnson lease, while another is located at Port Barre for the Pan American Production Co.

C & C Drilling Co. has completed the Josey & Bruton well in the Hastings field in Brazoria County and the rig has been moved over for Coastwide Oil Co. No. 1 Cecil Brown.

Glenn H. McCarthy abandoned the Drunella Oil Co. deep test in Vermilion Parish; is coring below 7,983 feet in his interesting wildcat test in Matagorda County near the town of Palacios, and has spudded his No. 1-B Longe in the Amelia field in Jefferson County.

Ben (Bud) Coyle has added another producer to his list at the Jeanerette field in St. Mary Parish by the completion of Herton Oil Co. No. 7 Banta for an initial production of 830 bbls. per day through a quarter-inch choke. The rig is being torn down and will be moved to another location.

Loffland Brothers marked up a 1,000-foot south extension for the Charenton field in St. Mary Parish by the completion of Pan American Production Co. No. 2 Laws Realty Co. It was completed at 7,194 feet and flowed 323 bbls. per day through a 12/64-inch choke. Contract was received from the same company for No. 3 Laws Realty Co. and it is to be spudded this week. The Continental Oil Co.'s deep hole in Vermilion Parish which is bottomed at 12,216 feet is being cleaned preparatory to testing, while for the same company in Matagorda County No. 12 Robbins is below 7,400 feet.

Cron & Gracey are rigging up in the St. Martinsville and the Dickinson fields for two wells for the Continental Oil Co. and Stanolind Oil & Gas Co. They are preparing to spud Fohs Oil Co. No. 1 State in Terrebonne Parish and have six other active rigs in the Placedo, West Columbia, Rockport, Roanoke and South Houston fields for Shell Petroleum Corp., Humble Oil & Refining Co., Stanolind Oil & Gas Co. and Barnsdall Oil & Refining Co.

There were 28 locations reported in the Gulf Coast district the past week, all in proven areas at Raccoon Bend, Hastings, Lockridge, Manvel, Heyser, Anahuac, Dickinson, Pierce Junction, South Houston, Tomball, Hull, Amelia, Nome, Van Vleck, Keeran and Pickett Ridge.

Credit for drilling the most interesting wildcat in the Southwest district which has opened a new type of production for the Laredo area goes to the Longhorn Drilling Co., composed of James Coquat and Henderson Coquat of Three Rivers, Tex. The well was drilled for the Hiawatha Oil Co. on the Southland Life Insurance Co. lease of 6,585 acres and was completed a prolific producer from the Conroe sand, which is the deepest production ever developed in that area. Prior to this completion the main objective of all wildcats was the Jackson formation reached at a comparatively shallow depth, consequently the Hiawatha completion has opened the way for deeper wells.

Smith and McDannald's drilling crew, on location in northwest extension area of Dickinson field. Standing left to right: Fred Holliday, C. E. Long (driller), J. A. Colson, J. N. Dulling, D. M. Chancey and G. Taylor

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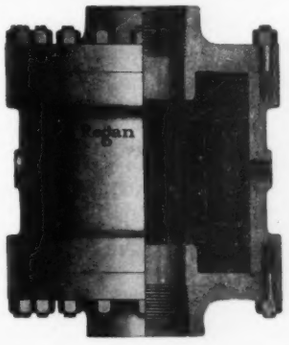

This is the stationary type of blowout preventer. It will pack off any object extending through it regardless of shape or size, if within the maximum and minimum limits specified for a given size unit. Enables operator to perform important operations such as running tubing, casing or drill pipe under pressure, perforating or setting liners under pressure and drilling under pressure. When properly applied it can be used to effect a complete shut-off when the tools are out of the hole. The packing unit consists of a hollow rubber cylinder securely anchored in a steel housing. The accordion design in the rubber permits great flexibility and a tight clamping effect dependent upon the amount of pressure applied. Various hook-ups for the use of this type blowout preventer are fully explained in our new bulletin which will be sent upon request, or see pages 1508-9, Composite Catalog.

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Eastern Field Report

By STAFF CORRESPONDENT

TEST IN MAHONING COUNTY FAILS TO FIND PRODUCTION

PITTSBURGH, Pa., Mar. 1.—The deep test of Harold C. Phillips and others on the Richard and Bell Fenton farm in Poland Township, 1 mile north of Lowellsville, Mahoning County, Ohio, and a mile west of the Pennsylvania state line, was a failure. The top of the Corniferous lime was at 3,785 feet; the top of the Oriskany sand 4,012 feet, and at 4,014 feet there was a showing of gas which was drowned out by salt water, which after six bailers of water had been taken out rose above the jars of the tools. There was no gauge on the gas and the standing level of the water has not been taken.

In Madison Township, Columbiana County, a mile north of the Oriskany gas well on the Margaret Jenkins farm, the Natural Gas Co. of West Virginia drilled the test on the Albert Ketchum farm into the Oriskany sand at 4,494 feet. Two feet in the sand there was a showing of 100,000 feet of gas a day.

The best well for the week in Southeast Ohio was a test in Medina County. On Lot 20, Chatham Township, E. R. Edson & Co. completed a test on the Ray Koons farm in the Berea sand at 563 feet. It produced 40 bbls. in three and one-half hours pumping the first day after shot, and the next day made 25 bbls. It will extend the shallow drilling in this pool.

In Athens County, the Hocking Valley Drilling Co. and others drilled a second test on the New York Coal Co. lease in the NW quarter of section 28, Dover Township, through the Clinton sand to a depth of 3,667 feet. It was dry.

In Belmont County, Shay McMullen completed a 600,000-foot gas well on the Nick Dyken farm in section 26, Richland Township, in Berea sand at 1,906 feet.

In Coshocton County, Willard Murphy & Co. drilled a test on the George L. Noland farm in the SW quarter of section 19, Washington Township, through the Clinton sand to a depth of 3,384 feet. It was a dry hole.

In Lorain County, the Kemrow Oil Co. drilled a test on the Charles Osborne farm, Lot 62, Columbia Township, through the Clinton sand, total depth 2,721 feet, and it was also a dry hole.

In Washington County, Thomas H. Cisler drilled a dry hole on the Seniour Duval farm on Archers Fork in section 34, Independence Township, through the Salt sand to 1,050 feet.

SOUTHWEST PENNSYLVANIA

News from the deep tests continues interesting. In Mount Pleasant Township, Washington County, Norwood Johnston and others made 101 feet in the test on the James McBurney farm, reaching 5,972 feet when there was a gas blowout above the tools at about 5,970 feet which caused a cave on top of the tools. It was impossible to jar the tools lose and the line has been cut to drill by and fish for them.

In South Union Township, Fayette County, William Snee and others, preparing to run casing to the bottom of the Tully lime in the test on the Summit Hotel property on Chestnut Ridge, ran three joints of 7-inch O.D. casing on the cable down to 5,700 feet, where they stuck. The hole is being reamed out at this point and if they then pass to bottom, 6,100 feet, the casing will be started. The deep test of the Potter Development Co. on the Indiana Savings Bank property on Laurel Ridge west of Johnstown is actively drilling and is making hole below the old bottom of 6,761 feet.

In Butler County, the deep test of Phillips-Wittmer on the Perry S. Davis farm, 1 mile south of Prospect in Franklin Township, is drilling at 4,880 feet in Brown shale. In Beaver County, the test of A. J. Wise, Jr., and others on the Beaver Falls Airport Corp. in South Beaver Township, is down 520 feet and shut down to run casing.

Only one completion was made in Southwest Pennsylvania. In Gilmore Township, Greene County, H. D. Freeland and others completed a test on the T. and J. Hoy farm at a total depth of 3,225 feet. The Pittsburgh Coal was at 700-708 feet and there is a volume of 736,000 feet a day from the Fifth and Bayard sands.

In Dunkard Township, Greene County, the Carnegie Natural Gas Co. is drilling at 2,042 feet on the Ella B. Parker farm. The Big Injun sand was at 1,680-1,855 feet with a small amount of gas at 1,794 feet. On the Dale Brand farm in this township, this company is down 1,230 feet. The Murphy sand was at 740-812 feet with a show of gas at 780-782 feet. There was a shell formation at 1,151-55 feet with 112,000 feet of gas at 1,155 feet which blew down to 92,000 feet a day.

In Center Township, Greene County, the same company is down 3,154 feet in No. 2 J. W. Milliken farm. The Gantz sand was at 3,069 feet, with some gas at 3,116 feet. The top of the Nineveh Thirty-foot sand was at 3,150 feet. The South Penn Oil Co. is spudding in the No. 10 on the Charles Harvey farm.

In Wayne Township, Greene County, the Equitable Gas Co. is preparing to deepen No. 1 from 2,080 feet on the E. and M. Cole farm. In this township, the Manufacturers Light & Heat Co. is down 2,095 feet in a test on the J. S. and O. R. Kiger farm. In Springhill Township, the North Eastern Gas Co. is drilling at 500 feet on the J. W. McNichols test.

In Washington County, the Carnegie Natural Gas Co. is spudding on the C. T. Dodd farm in South Franklin Township. Bloom & Bloom are drilling at 2,940 feet on the Clyde Hinerman farm. The Fourth sand was at 2,859-2,871 feet, with the top of the Fifth sand at 2,893 feet.

In Amwell Township, the Union Gasoline & Oil Corp. has reached 750 feet in a test on the C. H. Miles farm. Perrin & Co. is drilling at 2,620 feet on the B. A. Bonham farm. The Carnegie Natural Gas Co. is down 260 feet on the N. B. Redd farm.

In Morris Township, Washington County, the Manufacturers Light & Heat Co. is rigging up a test on the W. E. Craft farm. In Peters Township, Johnson & Henderson are drilling at 376 feet on the Bell heirs farm. In North Strabane Township, the Keystone Gas Co. is drilling at 2,506 feet on the George Martin farm. In Mount Pleasant Township, this company has started drilling a test on the Lawrence Cowden farm. In Robinson Township, the North Star Oil Co. is drilling a test on the Martin Perchins farm.

WEST VIRGINIA

Three producers were completed in West Virginia during the week. In Clay County, the South Penn Oil Co. completed No. 112 on the O. D. Stockley farm in Henry district in the Injun sand at 1,916 feet and it is good for 10 bbls. a day.

In Gilmer County, the Ludwig Oil & Gas Co. completed No. 3 on the Mrs. Gay Hinzman farm in DeKalk district in the Maxton sand, total depth 1,872 feet. It is showing for 10 bbls. a day.

In Pleasants County, Lawrence McClure and others completed a test on the Samuel G. Hammett farm in Jefferson district in the Maxton sand at a depth of 1,310 feet. It is good for four bbls. a day along with about 50,000 feet of gas.

Gas Wells

In Boone County, the United Fuel Gas Co. completed No. 4,641 on a Mohler Lumber Co. lease in Scott district as a gas well, total depth 4,740 feet. The Big Lime was at 1,734-1,958 feet; Big Injun 1,958-93 feet, Berea 2,435-55 feet; gas 2,440-49 feet, Brown shale 3,395-4,635 feet with gas at 3,395-4,573 feet. The Shale gas has a volume of 262,000 feet a day and the Berea gas 94,000 feet a day.

In Cabell County, the West Virginia Gas Co. completed a test on the H. S. and Bertha Nida farm in McComas district in the Brown shale as a gas well gauging 116,000 feet a day. Here the Big Lime was at 1,370-1,530 feet. Big Injun 1,600-55 feet, Berea 2,137-45 feet, Brown shale 2,910-3,252 feet with gas at 3,235-45 feet.

In Braxton County, the Pittsburgh and West Virginia Gas Co. completed No. 3 Amanda Gerwig farm in Otter district in the Shale at a total depth of 3,090 feet. It is a dry hole.

In Calhoun County, the Hays Gas Co completed a test on the Lora Hays farm in Washington district as a gas well at a total depth of 2,224 feet; Big Injun at 2,192 feet, with 2,332,670 feet of gas before the shot at 2,192-2,211 feet.

In Gilmer County, A. E. Ellis and others completed No. 6 Ware & Webster in DeKalb district as a gas well gauging 125,600 feet a day through the Injun sand, depth 2,115 feet. The Big Injun sand was at 2,015-2,100 feet with the gas at 2,053-63 feet. There was no oil in the Maxton sand.

In Marion County, the Hope Natural Gas Co. completed No. 2 Enoch C. Morgan in Lincoln district in Injun sand at 1,830 feet as a gas well gauging 300,000 feet a day.

In Ritchie County, W. D. Gribble and others test on the Strickler heirs farm in Clay district was drilled through Injun sand to 1,915 feet and is a small gas well gauging 50,000 feet a day.

In Tyler County, Rafferty & Moore completed a test on the Madison Ferrell farm in Lincoln district in the Injun sand to 1,787 feet. The lower sand was dry but it has a showing of 20,000 feet a day in the Maxton sand.

Oriskany Field

Two gas wells were completed in the proven Oriskany fields. In the Campbells Creek field, the United Fuel Gas Co. completed No. 4,658 on the Georges Creek Land & Mining Co. lease in Malden district as a gas well gauging 2,532,000 feet a day with a rock pressure at 960 pounds; Corniferous lime at 5,016-5,116 feet, Oriskany 5,116-37 feet, Helderberg 5,139 feet, and a small showing of oil at 5,123 feet.

In the Coopers Creek field, the United Carbon Co. test on the Forest Copenhaver farm in Elk district is an Oriskany sand gas well gauging 5,669,000 feet a day, with a rock pressure of 1,445 pounds. The total depth was 5,041 feet. In this district, the Columbian Carbon Co. reached the top of the Corniferous at 5,033 feet in the test on the Susan I. Given farm.

The United Carbon Co. made two more locations in this field. In Poca district the company made a location for a test on the James A. Moss and others lease on Grapevine Creek. The elevation is 739.2 feet. This company also made a location for a second test on the H. C. Smith farm

(Continued on Page 85)

Kansas Developments

By
DAL DALRYMPLE

BIG OIL WELL IN WEATHERED POOL; EXTEND WARKENTINE

Snow and generally unfavorable weather retarded field activity in Kansas this week, but several large producers were completed and some new wildcat tests were started. Among the larger of the new wells was the Lloyd, Frost & Study No. 4-A McKinley, SW SW NE section 33-31-1e, in the Weathered pool, Cowley County. It produced 3,084 bbls. of oil in 24 hours from Siliceous lime at 3,289 feet. It is the largest producer and farthest south producer in the pool.

Two wildcats gave promise of opening new producing areas. Wayne Cameron and others No. 1 Smith, SW SE SE sec. 13-27-2e, wildcat 6 miles east of Wichita in Sedgwick County, was showing oil in Kansas City lime pay topped at 2,371 feet; total depth, 2,398 feet. It was to be acidized. This test was higher geologically than a wildcat drilled 1 mile to the northwest last year.

Empire Oil & Refining Co. No. 1 Banterton, SE SW SE section 11-18-8w, wildcat northwest of the Geneseo pool in Rice County, produced 207 bbls. of oil with a trace of water after acidizing Siliceous lime at 3,270 feet. It had not been reported as a completion. The Edwards pool is in section 3-18-8w, to the northwest of the Banterton wildcat.

The Warkentine pool, Harvey County, was extended one-half mile southwest at Dickey Oil Co. No. 1 Masters, NE NE SW section 14-23-2w. It was bottomed at 2,961 feet, 23 feet below top of the Chat. Oil rose 1,600 feet in the hole in 45 minutes, and shortly afterward was standing at 2,800 feet. Tanks were being erected preparatory to testing.

Russell County

Completions in Russell County included two producers in the Trapp field and one in the nearby Coralena pool. Phillips Petroleum Co. No. 3 Hoffman, NE NW SE section 31-15-13w, Trapp, topped Siliceous lime at 3,317 feet; total depth, 3,323 feet; acidized with 4,000 gallons and made potential of 2,774 bbls. of oil. W. I. Southern, Inc., No. 1 Neidens, SW NW NE section 32-15-13w, pumped 1,204 bbls. of oil in 12 hours, after treating with 4,000 gallons of acid, and made potential of 2,149 bbls. of oil, cutting 8 per cent water. It topped Siliceous lime at 3,335 feet; total depth, 3,339 feet.

In the Coralena pool, Carter Oil Co. No. 1 Detrich, SW cor. section 8-15-13w, topped Topeka lime at 2,630 feet; had pay at 2,878-88 feet, total depth; acidized with 3,000 gallons; flowed 217 bbls. of oil in 24 hours; reacidized with 3,000 gallons, flowed 150 bbls. of oil in 2 hours, and made potential of 389 bbls. of oil, with 1.8 per cent water.

Three producers and one failure were recorded in the Gorham-Sullivan district. Transwestern Oil Co. No. 3 Polcyn B, NE NE SE section 10-14-15w, topped Gorham sand at 3,236 feet; total depth, 3,247 feet, with water showing; plugged back to 3,244 feet, shot and made potential of 1,559 bbls. of oil, cutting 6 per cent water. Same company's No. 1 Polcyn C, NW NW SW section 11-14-15w, had Gorham sand at 3,250-58 feet, total depth, and made potential of 1,267 bbls. of oil. Bridgeport Machine Co. No. 9 Mermis, NE SE SW section 33-13-15w, topped Granite Wash at 3,284 feet; had Granite at 3,298-3,324 feet, total depth; plugged back to 3,298 feet; shot and made potential of 240 bbls. of oil. Hartman & Blair No. 4 Sullivan, SE cor. section 2-14-15w, topped Siliceous lime at 3,304 feet; was bottomed at 3,311 feet; plugged back to 3,310 feet; acidized with 1,000 gallons, produced only water and was abandoned.

In the Harbaugh area, National Refining Co. No. 1 West Reinhardt A, NE NE NW section 36-14-15w, found Siliceous lime at 3,178 feet; had pay at 3,193-96 feet, total depth; made potential of 2,489 bbls. of oil.

Getty, Inc., No. 1 Baxter, SE SE NE section 8-15-15w, wildcat, topped anhydrite at 892 feet; Kansas City, 3,080 feet; Topeka, 2,795 feet; Siliceous lime, 3,340 feet, had a hole full of water at 3,360-65 feet, total depth, and was dry and abandoned.

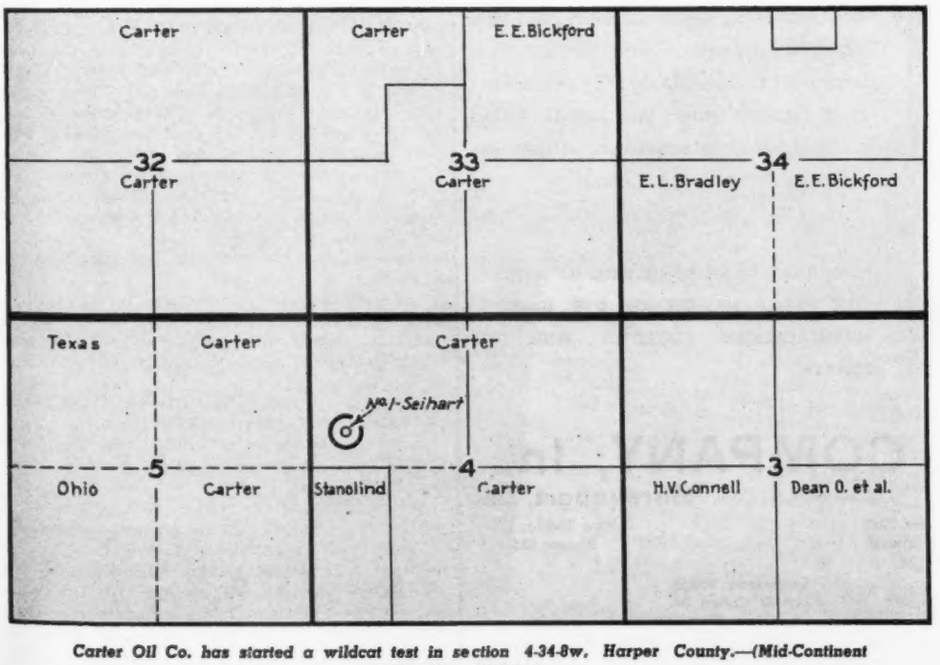
New work in Russell County: Hartman & Blair No. 8 Rouback, SW SW NW section 2-14-15w, building rig; Transwestern Oil Co. No. 5 Polcyn B, SE NE SE section 10-14-15w, building rig; same company's No. 2 Polcyn C, SW NW SW section 11-14-15w, rigging up rotary; Wolk Creek Oil Co. No. 2 Mills, NE SE NW section 10-14-15w, building rig; Central Petroleum Co. and others No. 5 Rouback, NE cor. section 15-14-15w, cellar; Darby Petroleum Co. No. 1 Dumler D, NW SW NE section 36-14-15w, moving in material; Carter Oil Co. No. 1 Josephine, SE cor. section 7-15-13w, location; Phillips Petroleum Co. No. 5 Hoffman, SW NE SE section 31-15-13w, building rig; W. I. Southern, Inc., No.3 Neidens, NW NW NE section 32-15-13w, location.

British American Oil Producing Co. No. 2 Boxberger, NW NE NE section 33-13-14w, had pay at 3,098-3,104 feet, and oil rose 2,000 feet in the hole in six hours, with a slight showing of water. Skelly Oil Co. No. 2 Dumler, NW SW NE section 1-14-15w, topped Topeka lime at 2,772 feet; total depth, 2,775 feet; acidized with 2,000 gallons and pumped 866 bbls. of oil in 10 hours. A. H. Witt No. 3 Witt, NW NE SE section 3-14-15w, topped Tarkio lime at 2,505 feet; was bottomed at 2,565 feet; flowed and swabbed 430 bbls. of oil in 10 hours, and pumped and flowed 70 bbls. of oil per hour, cutting 5 per cent water. Shell Petroleum Corp. No. 6 Michaelis, SW SE NE section 31-15-13w, topped Siliceous lime at 3,329 feet; total depth, 3,335 feet; swabbed 47 bbls. of oil per hour, and was acidized but not tested. Empire Oil & Refining Co. No. 1 Michaelis, C N half N half SE section 27-15-14w, topped Siliceous lime at 3,359 feet; total depth, 3,372 feet; oil rose 1,875 feet in the hole and it was acidized but not tested.

Estimated Daily Production

Estimated daily average production of Kansas for the week ending February 27, and for the preceding week, was as follows:

	Barrels	
	Feb. 27	Feb. 20
Oxford City	2,725	2,700
Burrton	16,075	15,950
Ritz-Canton	5,700	5,650
Graber	3,075	2,825
Hollow-Nikkel	3,600	3,600
Voshell	3,050	3,050
Wellington	2,775	2,705
Ellsworth County:		
Lorraine-South Lorraine	6,300	6,000
Other pools	1,415	1,355
Rice-Barton counties:		
Bloomer	3,875	2,850
Chase	9,950	8,925
Geneseo	2,500	3,375
Raymond	2,350	2,900
Silica	17,450	17,325
Keesling	2,450	2,100
Hauschild	3,625	3,825
Miscellaneous Rice	5,690	6,440
Miscellaneous Barton	3,995	5,430
Russell County:		
Fairport	2,685	2,385
Gorham-East Gorham	3,395	5,820
Russell	2,525	2,910
Sullivan	4,120	2,480
Trapp	6,050	5,855
Miscellaneous Russell	6,135	5,900
Sedgwick County:		
Valley Center	1,315	1,340
Greenwich	1,340	1,320
Miscellaneous Sedgwick	2,025	1,980
Ellis County:		
Bemis	2,050	3,900
Miscellaneous Ellis	1,365	1,510
Kingman County	710	790
Stafford County	2,475	2,630
Greenwood	9,500	9,500
Butler County	17,850	17,900
Other fields	22,735	22,980
Total Kansas	183,175	186,250



Carter Oil Co. has started a wildcat test in section 4-34-8w, Harper County.—(Mid-Continent Map Co., Wichita)

Rice County

Five wells were completed in the Silica district and one in the Chase area, Rice County. Gulf Oil Corp. No. 3 Knop, NW cor. section 33-

The NEW Improved

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19-10w, topped Siliceous lime at 3,270 feet: total depth, 3,286 feet; swabbed 308 bbls. of oil in six hours and made potential of 1,781 bbls. Same company's No. 9 Stoltz Jr., NW NE NW section 5-20-10w, made potential of 1,657 bbls. of oil after acidizing with 1,000 gallons. It swabbed 320 bbls. of oil before treatment, from Siliceous lime topped at 3,294 feet; total depth, 3,307 feet. Same company's No. 9 Stoltz, NW SW NW section 32-19-10w, swabbed 248 bbls. of oil in six hours before treating, and made potential of 997 bbls. after acidizing. Production was from Siliceous lime at 3,273 feet; total depth, 3,286 feet.

J. H. Tatlock No. 3 Berscheit A, SE SW SW section 6-20-10w, had Siliceous lime at 3,273 feet; was bottomed at 3,290 feet; and made potential of 889 bbls. of oil. Same operator's No. 5 Berscheit B, SW NW SW section 6-20-10w, made potential of 1,449 bbls. of oil after treating with 1,000 gallons of acid. It topped Siliceous lime at 3,291 feet and was bottomed at 3,305½ feet.

In the Chase area, Empire Oil & Refining Co. No. 2 Weiland, SW SW SE section 32-19-9w, acidized with 2,000 gallons and pumped 326 bbls. of oil in 21½ hours. It was reacidized with 2,000 gallons and made potential of 408 bbls. of oil, down five hours. Production was from Siliceous lime at 3,227 feet; total depth, 3,233 feet.

First reports of new work in Rice County: Gulf Oil Corp. No. 5 Wendell, NW SW SE section 32-19-10w, building rig; same company's No. 13 Stoltz Jr., NE NE NW section 5-20-10w, building rig; same company's No. 14 Stoltz Jr., SE NE NW section 5-20-10w, moving in material; Aylward and others No. 5 Johnson, NW SW NE section 17-21-7w, cellar.

Rose & Son No. 1 Callis, SW SE SW section 32-19-9w, swabbed 40 bbls. of oil an hour for three hours after acidizing with 1,000 gallons. Top of Siliceous lime was 3,205 feet; total depth, 3,214 feet. J. H. Tatlock No. 4 Drew, SW NW SW section 5-20-10w, topped Siliceous lime at 3,319 feet; was bottomed at 3,337 feet, with 300 feet of oil in the hole, acidized with 1,000 gallons and was waiting. Buchanan and others No. 1 Wenke, NE NW SE section 18-20-10w, made potential of 618 bbls. of oil, with 50 bbls. of water, after acidizing with 1,000 gallons. Top of Siliceous lime was 3,299 feet; total depth, 3,311 feet. Gulf Oil Corp. No. 1 Hirsch, SE SW NE section 18-20-10w, pumped 297 bbls. of oil in 19 hours after treating with 1,000 gallons of acid. Top of Siliceous lime was 3,277 feet; total depth, 3,297 feet. Pryor & Lockhart No. 1 Hannakratt, SE NE SW section 8-21-7w; total depth, 3,375 feet; swabbed 20 bbls. of oil an hour for 12 hours.

Barton County

Three new producers were completed in the Bloomer pool, Barton County. Texas Co. No. 1 McLean, SW SW NE section 25-17-11w, found Siliceous lime at 3,304 feet and was bottomed at 3,322 feet. It swabbed 152 bbls. of oil in 12 hours; was treated with 1,000 gallons of acid, and made potential of 343 bbls. of oil. Skelly Oil Co. No. 8 Bloomer, NE SE NE section 36-17-11w, topped Siliceous lime at 3,245 feet; total depth, 3,251½ feet; pumped 1,805 bbls. of oil in 18 hours; acidized with 1,000 gallons and made potential of 2,540 bbls. Republic Oil Co. No. 3 McLean, NW NW SE section 25-17-11w, plugged back from 3,338 feet, total depth, to 3,335 feet and was completed for potential of 354 bbls. of oil. It topped Siliceous lime at 3,315 feet, and was acidized two times.

In the Ainsworth area, Indian Territory Illuminating Oil Co. No. 1 Hogan, NW NW SW section 34-16-13w, topped Siliceous lime at 3,365 feet; total depth, 3,372 feet; and made potential of 1,386 bbls. of oil, naturally.

Helmerich & Payne No. 1 Krause, C SE section 18-18-15w, in the Barton County sector of the Otis area, topped sand at 3,493 feet, was bottomed at 3,515 feet, and produced 27,000,000 feet of gas, completed.

Pierson and others No. 1 Hart, SW SW NE section 9-20-13w, was an abandoned location.

Three new operations in Barton County were reported. E. F. Wakefield and others No. 1 Scheuerman, NE NE SW section 31-16-15w, wildcat southwest of Galatia in the northwestern part of the county, was a rig. Magnolia Petroleum Co. No. 1 Reesler, NE NE NW section 1-18-11w, was rigging up rotary. Schermerhorn Oil Co. and

others No. 1 Bird, NE cor. section 33-18-15w, was a location.

Stanolind Oil & Gas Co. No. 1 Riemann, SW SW NW section 34-16-13w, swabbed 50 bbls. of oil an hour for three hours after stopping at 3,376 feet, total depth. Top of Siliceous lime was 3,374 feet. Same operator's No. 2 Burmeister, NE NE SW section 33-19-11w, wildcat, was bottomed at 3,342 feet; acidized with 1,000 gallons and production was estimated at 1 bbl. of oil per hour. It was reacidized with 2,000 gallons and was waiting. Gulf Oil Corp. planned to deepen No. 1 Meyer, SW SW SE section 13-20-11w, after it swabbed only 46 bbls. of oil in 24 hours after shooting at 3,240-61 feet; total depth was 3,311 feet. Simpson Oil Co. and Atlantic Refining Co. No. 2 Hiss, SW NW NE section 31-20-13w, flowed 1,053 bbls. of oil in 12 hours after treating with 5,000 gallons of acid; total depth, 3,290 feet.

Reno County

Texas Co. No. 8 Collins, SW NW NW section 16-24-4w, Burrton district, was the only Reno County completion. It topped Chat at 3,280 feet and was bottomed at 3,360 feet. It was acidized with 1,000 gallons and flowed 145 bbls. of oil, with 10 per cent water, in 24 hours. It was acidized again with 3,000 gallons and made potential of 504 bbls. of oil, with 14 per cent water.

Hartley, Farley & Perry No. 1 Fryer, NW NE NE section 2-24-4w, was an abandoned location.

New work in Reno County: Westgate-Greenland Oil Co. No. 1 O'Sullivan, SW SW NE section 24-23-5w, wildcat between Hutchinson and the Burrton field, was a rotary rig; A. M. Ballard and others No. 1 W. G. Skelly, NW SE NE section 16-24-4w, location; Phil-Han Oil Co. and others No. 1 Tucker, NW SW SW section 20-24-4w, moving in material; Empire Oil & Refining Co. No. 3 Mauck, NW SE NW section 15-26-9w, building rotary rig; Shell Petroleum Corp. No. 6 M. Whipple, C N half N half NE section 15-26-9w, building rotary rig.

Magnolia Petroleum Co. No. 1 Wiese, SE SE NE section 8-26-4w, had Viola lime at 4,065-66 feet, total depth, acidized with 1,400 gallons but had not been tested. Shell Petroleum Corp. No. 4 Reese, C S half S half SW section 11-26-9w, topped Viola lime at 4,135 feet; total depth, 4,138 feet; acidized with 1,000 gallons, and flowed 477 bbls. of oil, with 4 per cent basic sediment and water, in three hours. Same company's No. 4 Whipple, SE SW NE section 15-26-9w, flowed 660 bbls. of oil in six hours after treating with 4,000 gallons of acid; total depth, 4,146 feet.

McPherson County

Newest completion in the Graber field is Ohio Oil Co. No. 10 Decker, SE NE SE section 20-21-1w. It topped Hunton lime at 3,290 feet and was bottomed at 3,302 feet. After treating with 2,000 gallons of acid, it made potential of 1,524 bbls. of oil. Same company's No. 5 Decker, NE cor. section 20-21-1w, an old well, was deepened from 3,340 feet to 3,518 feet, new total depth; plugged back to 2,950 feet; shot, produced 20,000,000 feet of gas and was recompleted.

Only new work reported in McPherson County was at Continental Oil Co. and others No. 6 Ketzke, NW NW NE section 29-21-1w. Ten-inch casing was set at 140 feet, and it was waiting on cement.

Continental Oil Co. and others No. 1 Kinblade, NE SE SW section 20-21-1w, topped Hunton lime at 3,287 feet; had pay at 3,309-14 feet; based Hunton at 3,331 feet; was bottomed at 3,334 feet. Oil rose 1,500 feet in the hole but it had not been tested.

Ellis County

Gulf Oil Corp. No. 1 Walter, SW NW SE section 2-12-18w, Walter pool, Ellis County, topped Siliceous lime at 3,614 feet; total depth, 3,619½ feet. It swabbed 439 bbls. of oil in 14 hours; was acidized with 1,000 gallons, and made potential of 1,557 bbls. of oil, down one hour and 15 minutes. It topped Topeka lime at 3,080 feet; Kansas City, 3,335 feet; Simpson, 3,594 feet. It is an east offset to the discovery well, a Topeka lime producer drilled by Lario Oil & Gas Co. Discovery of Siliceous lime production in this area increases interest in the Walter pool.

Rush County

Carter Oil Co. No. 1 Schroeder, NW SW SE section 23-18-16w, Otis field, Rush County, topped sand at 3,474 feet; total depth, 3,535 feet; pumped and flowed 304 bbls. of oil in 24 hours, with 29,000,000 feet of gas, and was completed.

Sedgwick County

Western Kansas Oil & Refining Co. No. 1 Keagy, NW SE SW section 15-25-1e, Goodrich area, Sedgwick County, topped Viola lime at 3,378 feet; total depth, 3,379 feet; pumped 427 bbls. of oil in 24 hours, with an estimated 20 bbls. of water, and was completed.

Shell Petroleum Corp. No. 2 Fisher, SE NE SE section 15-26-2e, an old well, was deepened from 3,324 feet to 3,354 feet; plugged back to 3,351 feet, and made potential of 102 bbls. of oil, recompleted.

Greenwood County

Polhamus No. 2-A Gechter, SW cor. section 36-25-10, was the only Greenwood County completion. It topped lime at 1,950 feet; had pay at 1,959-84 feet, total depth; acidized with 1,000 gallons, and was completed for 60 bbls. of oil daily.

T. K. Simmons and Amerada Petroleum Corp. No. 4 Ellis B, SE SE NE section 27-23-11, was drilling at 600 feet.

Chautauqua County

Sagamore Oil Co. No. 9-B White, C SW NW section 15-32-12, Chautauqua County, had sand at 1,108 feet; total depth, 1,146 feet; produced 300,000 feet of gas, completed.

Woodson County

Elbar Corp. No. 6 Opperman, NW NE NE section 27-23-14, Woodson County, topped lime at 1,641 feet; was bottomed at 1,650 feet; acidized

(Continued on Page 86)

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Michigan Field Report

BUCKEYE FIELD, IN GLADWIN COUNTY, ADDS 3 BIG WELLS

By
PAUL A. ELLIOTT

MUSKEGON, Mich., Mar. 1.—Michigan's greatest oil field since the development of the Porter Township, Midland County, area, still the state's heaviest producing section, was indicated last week in the Buckeye Township, Gladwin County, field, where three new wells added nearly 4,000 bbls. initial production to the daily output of the pool.

While two previously completed Dundee oil producers added nearly 2,000 bbls. daily to the output of the Clayton Township, Arenac County, pool, another of the three principal new fields discovered in Michigan during recent weeks, there were indications of a field more than 5½ miles long and 2 or 3 miles wide in Buckeye Township, with the high point probably lying somewhere between two already developing extremities.

An idea of the estimation of the new Buckeye field by major and independent operators alike can be gained by the record high prices being paid for leases. On top of the $99,600 paid two weeks ago for oil rights on 180 acres of state land in three tracts bid in by R. E. Olds, founder of the Oldsmobile and Reo automobile plants, of Lansing; the Gordon Oil Co. and the Wicklund Development Co., the state's all-time record was set when the Mammoth Producing & Refining Co. paid $63,360 for the lease on 40 acres in the heart of the new field.

The tract, including the NE SE of section 10-18n-1w, Buckeye-Gladwin, about half a mile west of a lease on which a 1,175-bbl. Dundee producer was brought in recently, was purchased from the Daily Crude Oil Co., and included No. 1 Joseph Jakab test now being drilled by the Daily company.

The Rex Oil & Gas Co., of Alma, affiliated with the Naph-Sol Refining Co., of Muskegon, also paid a high sum, $48,250, for a 60-acre lease in section 11, Buckeye Township, three-fourths of a mile northwest of the discovery well. The property is owned by the Anna Jacobs Estate.

Buckeye—Gladwin

Six producers in the new Buckeye Township, Gladwin County, field, were flowing about 8,000 bbls. daily as the week closed making this area second only to the Porter-Yost field of Midland County in daily production.

Both the Simrall Pipe Line Corp., of Mount Pleasant, and the Pure Transportation Co.'s Michigan division, also operated from Mount Pleasant and Saginaw, were laying 6-inch lines to transport crude from the new field. The Simrall line will extend 33 miles to Mount Pleasant, where it will be connected with the Michigan-Toledo pipe line within a month or six weeks. The Pure line will extend 11 miles to the village of Beaverton, whence crude will be shipped by rail or pipe line to refineries.

Three wells had been completed for an aggregate daily initial of 3,988 bbls., while 20 others were drilling; 10 were moving in or rigging and half a dozen other locations had been made as the week closed.

The largest well yet brought in in the field was the Beaver, or Double-K Trust, No. 1-A State, NW NW NE section 14, which gauged 1,407 bbls. a day, flowing naturally, after penetrating 20 feet of Dundee pay sands to 3,627 feet. Pay was topped 60 feet in the Dundee limestone. The well is a south offset to the Wicklund Development Co.'s discovery, also on a state of Michigan lease.

Gauging just 1 bbl. daily less than the Beaver-State, was Smith & McClanahan No. 1 Brenner, SE SE SW section 11, Buckeye, which produced 1,406 bbls. in 24 hours as the west offset to the discovery. Dundee was topped at 3,545 feet and the well drilled to 3,618 feet, total depth.

Three locations north of the Brenner, the Mammoth Producing & Refining Co. brought in No. 1 Ockerman, SE NW SW section 11, with a flow of 1,175 bbls. at a total depth of 3,613 feet.

In the southeast corner of the township, near the Goll, Graves & Mechling Oard discovery well of 1936, the Rowmor Corp. was swabbing No. 1 State, NW NW NE section 36, which filled up 1,200 feet in 12 hours, indicating commercial production as well as the length of the field.

Samples of crude from the Oard well and from the center of the newly developing north Buckeye area, indicate they may be connected, giving the field a length of more than 5½ miles, it was reported.

Beaverton—Gladwin

South of the original Gladwin County pool in Beaverton Township, opened more than a year ago by M. F. Whitehill, Frank T. Schooneas, trustee, No. 1 Yager, SW NE NE section 36-17n-2w, was rated good for 100 bbls. a day, the first test to confirm the Crigano well brought in last year as an extension of the Beaverton, or more likely a new field in the same township. Dundee was topped at 3,786 feet and the well completed at 3,843 feet.

Development of at least two and possibly three or four pools in Gladwin County has advanced it to the fore in plans of many operators for a more active drilling program in Michigan in 1937 than in 1936, when more tests were drilled than ever before in the state's 12-year oil history.

Clayton—Arenac

Two wells treated with acid increased their production in the Clayton Township, Arenac County, field.

The Weber Oil Co. No. 1 Helein, east offset to the McClanahan Oil Co. No. 1 Seignious discovery well, was increased from a daily output ranging from 500 to 600 bbls. to 2,200 bbls. a day with acid, while the discovery well made 65 bbls. an hour after treatment, or 1,660 bbls. daily.

Two new completions in the Arenac field were disappointingly small, Devonian Oil Co. getting 150 bbls. daily from No. 1 Crandell, NW SE SE section 10-20n-4e, 140 feet in the Dundee, and the Gulf Refining Co. reporting 50 bbls. daily from No. 1 Kalander, NE SE NW, same section, but planning to deepen and treat below 3,578 feet.

T. F. Caldwell, Inc., was treating No. 1 Peavy, NW SW NE section 9, same township, and the Turner Petroleum Co. was still testing a show of 600 feet of oil in the hole in No. 1 Thompson, NW SE SE section 4. Two other Clayton tests were nearing Dundee completion, the Turner No. 1 McKay, NW SW SE section 10, and the McClanahan Oil Co. No. 2 Seignious, NE NW NE, same section.

Fremont—Isabella

Smith & McClanahan No. 1 Simmons, NE NE SE section 3-13n-5w, Fremont Township, Isabella County, topped the lime at 3,650 feet and got water at 3,683 feet, where the hole was plugged and abandoned.

The other test in the township, H. E. Bell No. 1 Delo, SE SW SW section 17, was drilling near the Dundee, and expected to complete this week.

Sherman—Isabella

In the third new oil field recently opened in Michigan, Charles Strange was in difficulty with his No. 1 State, SW SE SE section 34-15n-6w, Sherman Township, Isabella County, with a bailer in the hole during testing operations at 3,650 feet, where a good showing had been found about 8 feet in the Dundee.

The Rowmor Corp. No. 1 Leiter, NE NE SW section 33, and the Pure Oil Co. No. 1 Leiter, NW NW NW section 34, both in Sherman, were nearing Dundee completion.

Ogemaw County

The only other oil completion of the week was Morris and Barnes Oil & Gas Corp. No. 7 Golf Club, NW NE SW section 20-22n-2e, West Branch Township, Ogemaw County, which made 150 bbls. after acid treatment in the Dundee, drilled to 2,748 feet, or 185 feet in the limestone.

Richland Oil Co. also was completing No. 3 Husted, SE NW SE section 36, same township, in which oil had been found and the pay sands treated with acid. Another test, which struck a show in Traverse formation the week before, Dunnigan & Fothergill No. 1 Christman, SE SE SE section 19, same township, was nearing the Dundee.

Midland County

Pure Oil Co. drilled into the oil pay sands of the Dundee in No. 3-D John B. Rayner, S half SE NE section 11-13n-2w, Jasper Township, Midland County, and was acidizing Dundee topped at 3,411 feet and drilled to 3,444 feet.

Pure Oil Co. also was near completion of No. 17 Bond-Root, S half SW NE section 3, Jasper Township, while the same company boosted the flow of No. 2-E Root, C S half SW section 7-13n-1w, Porter Township, from 25 to 100 bbls. daily by acid treatment.

Schelling & Schrot also were nearing Dundee completion of No. 1 Holmes, NE SW NW section 8-14n-2w, Greendale Township.

Gassers

Renewed interest in the Tri-Townships gas field, largest in the state, was aroused by completion of the Stewart-Atha No. 7 Amsden, C NW SW section 31-13n-7w, Millbrook Township, Mecosta County, for an open flow capacity of 13,800,000 feet daily. The well was drilled to 1,308 feet on the west edge of the field.

Superior Drilling & Producing Co. completed No. 1 Clevenger, C SE SW section 5-12n-7w, Belvidere Township, Montcalm County, for an open flow capacity of 1,477,000 feet daily after penetrating 23 feet of pay to a total depth of 1,321 feet.

Three tests were nearing Dundee completion in the Ferris Township part of the Crystal-Montcalm oil field. The following were cased: Burnstein Oil & Gas Corp. No. 4 Keel, NW NE SE section 35-11n-5w, Daily Crude Oil Co. No. 3-B Fulford, NW NE NE section 35, and the Rex Oil & Gas Co. No. 1 Conners, SE NW NE section 35.

Ravenna—Muskegon

More than 2,000,000 feet of gas open flow was added to the output of the Ravenna field in Muskegon County last week by the completion of one well and near completion of two others.

The largest of the three was the West Michigan Consumers Co. No. 1 Thompson and others, C SE section 5-9n-16w, Ravenna Township, which gauged about 1,000,000 feet daily at a total depth of 1,241 feet. Pay sands of the Berea were topped at 1,222 feet, 1 foot in the shallow formation, and extended for a thickness of 13 feet to 1,235 feet.

Although not yet completely cleaned out after

(Continued on Page 82)

Oklahoma Operations

By
DAL DALRYMPLE

PAWNEE, LINCOLN WILDCATS SHOW OIL; EXTEND BRITTON

Wildcats in Pawnee and Lincoln counties had favorable showings of oil, two large producers were completed in the South Britton pool of Oklahoma County, eight oil wells were completed in the rapidly expanding Olympic field of Okfuskee County and several new wildcats were started the past week in Oklahoma.

Forest Production Co. and others No. 1 Greisel, C NW NE section 21-21-5, wildcat southeast of Pawnee in Pawnee County, gave promise of opening a Bartlesville sand pool at the week end. Top of the sand was found at 3,229 feet and good shows of oil were found in cores to 3,260 feet. Operators were to cement 7-inch casing and standardize.

In Lincoln County, Anderson-Prichard Oil Corp. No. 1 Colon, C N half SE SW section 28-17-4, wildcat in northern part of the county between Agra and Ripley, had oil showing in Wilcox sand cores at 4,345-53 feet. It was reported running considerably higher geologically than an old gas well drilled one-half mile northeast.

A few days after completing an 8,096-bbl. well on the north side of the South Britton pool, Frank Buttram and associates extended the producing area to the southeast to within one-fourth mile of Britton townsite with a 5,394-bbl. well. The newest producer is the No. 1 Zielny, NW SE SE section 20-13-3w, bottomed at 6,738 feet in Dolomite. There are only three active operations in the field, but the new strikes are expected to revive drilling.

The daily allowable crude oil production for March will be 620,460 bbls., it was reported following a conference between Chairman Reford Bond and A. S. J. Shaw, of the Corporation Commission. This is an increase of 38,560 bbls. over the February allowable; an increase of 29,760 bbls. over the federal Bureau of Mines market demand estimate, and 44,804 bbls. less than was nominated by purchasers. This is the highest allowable granted by the commission under present proration laws. The corporation commissioners said the increase was justified in view of conditions; that evidence indicated a new market for much of the increase, that the amount could be produced without waste and that purchasers are able and willing to take more oil from Oklahoma fields.

Oklahoma County

Frank Buttram's first big producer of the week in the Britton pool was at No. 1 Winters, SW SE NW section 20-13-3w. It topped Simpson Dense at 6,568 feet and was bottomed at 6,685 feet. After shooting and acidizing two times, it flowed 1,349 bbls. of oil in four hours, making potential of 8,096 bbls. Gas averaged 9,287,000 feet daily. This well is northeast of the Britton community block and is on the north line of production. South and southwestern offset locations are owned by Transwestern Oil Co. and the west offset location is owned by Ohio Oil Co. and others. Frank Buttram has the north and east offset locations.

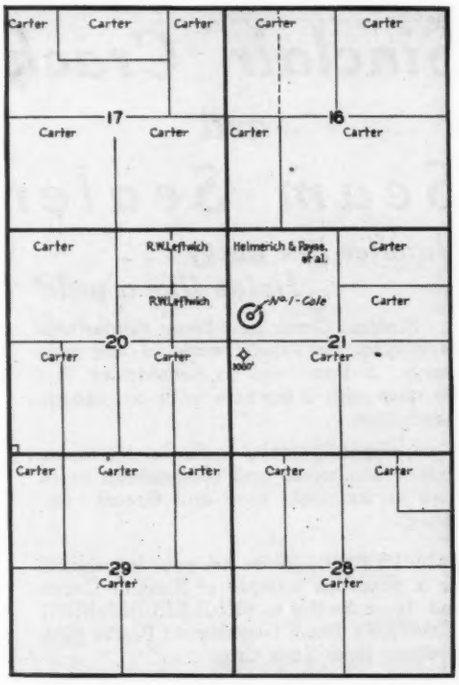
Gulf Production Co. No. 3 Capitol, SE SW NW section 6-13-3w, farthest south producer in the Edmond pool, was officially completed as pumper, with production estimated at 300 bbls. daily. Top of Simpson zone was 6,335 feet; first Wilcox sand, 6,660 feet; total depth, 6,712 feet; plugged back to 6,662 feet.

Three new wells were completed in the Oklahoma City field. Knox Garvin No. 1 Brewer, NE NW SE section 27-12-3w, topped second Wilcox sand at 6,368 feet and was bottomed at 6,492 feet. It made potential of 1,744 bbls. of oil daily on gas lift. H. H. Wegener No. 2 University, NW SE SE section 27-12-3w, made potential of 1,147 bbls. of oil daily, and was completed at 6,475 feet, total depth. Top of second Wilcox sand was 6,316 feet. British American Oil Producing Co. No. 2 Francis, SW SE SW section 22-12-3w, topped second Wilcox sand at 6,440 feet, drilled in under pressure to 6,500 feet, total depth, and made potential of 819 bbls. of oil in 24 hours on gas lift.

Anderson-Prichard Oil Corp. No. 1 Levy, NE NE NW section 22-12-3w, an old well, was deepened from 5,705 feet to 6,465 feet, new total depth. After shooting and acidizing, it flowed 73 bbls. of oil in 24 hours, recompleted. It topped Simpson zone at 6,356 feet.

Pontotoc County

It was a comparatively quiet week in the Fitts field, Pontotoc County, only five wells being completed in that busy area. One producer was completed in the Jesse pool and another Pontotoc County test was abandoned.



Penn State Oil Co. No. 1 Cole is a new wildcat in section 21-3n-25w, Harmon County.—(Mid-Continent Map Co., Tulsa)

E. H. Moore and others No. 1 McCarty, SE SW NE section 22-2n-7, topped Hunton lime at 3,708 feet and was bottomed at 3,735 feet. It flowed 716 bbls. of oil in 1 hour and 30 minutes and made potential of 5,242 bbls. Gas gauged 6,700,000 feet.

Fleetborn Oil Corp. No. 5-A Morin, NE SE SE section 20-2n-7, flowed 326 bbls. of oil gross in two hours after acidizing with 10,000 gallons and made potential of 3,140 bbls. Top of Hunton lime was 3,615 feet; Sylvan shale, 3,924 feet; total depth, 3,926 feet. Sinclair Prairie Oil Co. No. 2 Moody A, SW SE NE section 22-2n-7, topped Hunton lime at 3,704 feet; total depth, 3,825 feet; acidized with 10,000 gallons and flowed 526 bbls. of oil in two hours, making potential of 3,558 bbls. Skelly Oil Co. No. 2 Ingram, NE NW SW section 23-2n-7, topped Hunton lime at 3,692 feet, was bottomed at 3,812 feet, and flowed 637 bbls. of oil in five hours. After acidizing with 8,000 gallons, it made potential of 4,480 bbls. Fleetborn & Simpson No. 1-A Woolley, NW NW SE section 28-2n-7, flowed 170 bbls. of oil gross in one hour after treating with 10,000 gallons of acid, and made potential of 1,924 bbls. It topped Hunton lime at 3,200 feet; Sylvan shale, 3,459 feet; total depth, 3,460 feet.

In the Jesse pool, Continental Oil Co. No. 2 Helm, SW SW SE section 2-1n-7, topped Viola lime at 4,115 feet; Bromide, 4,363 feet; total depth, 4,560 feet. It flowed 299 bbls. of oil in 4 hours and 30 minutes and made potential of 874 bbls. of oil.

H. G. Marshall and others No. 1 Malloy, SE NW SW section 30-5-4, had a slight showing of oil at 1,924-36 feet, but was dry and abandoned at 1,980 feet, total depth.

Estimated Daily Production

Estimated daily average production of Oklahoma for the week ending February 27, and for the preceding week, was as follows:

	Barrels	
	Feb. 27	Feb. 20
Allen	6,550	6,825
Burbank	7,750	7,775
South Burbank	15,750	15,700
Balance Osage	22,000	21,750
Blackwell district	4,950	4,925
Bristow-Slick	8,000	7,950
Chandler	3,800	3,800
Crescent	9,500	12,025
Cromwell	3,375	3,325
Cushing-Shamrock	10,700	10,630
Duncan district	3,925	3,950
Edmond	15,975	19,825
Fish	6,850	7,075
Fitts	90,175	81,450
Graham	4,775	4,775
Gray	1,450	1,225
Healdton	9,750	9,725
Hewitt	4,375	4,400
Holdenville	900	900
Keokuk	9,250	10,100
Konawa	1,725	1,600
Lucien	12,950	12,900
Marshall-Lovell	850	875
Oklahoma City	140,050	147,900
Olympic	14,725	14,500
Papoose	1,000	1,000
Polo	1,700	1,675
Sasakwa and townsite	2,900	3,000
Sholem-Alechem	3,325	3,350
Seminole:		
Bowlegs	11,650	12,525
Carr City	6,175	5,975
Earlsboro	6,075	5,825
South Earlsboro	750	775
East Earlsboro	7,975	7,675
Little River	11,175	11,200
East Little River	1,200	1,200
Maud	850	825
Mission	2,250	2,325
Seminole	10,250	10,275
East Seminole	3,750	3,950
Searight	5,250	4,900
Total Seminole	67,350	67,450
St. Louis-Pearson	21,975	22,225
Tatums	4,350	4,400
Tonkawa-Garber-Thomas	5,800	5,800
Wewoka	3,650	3,625
Yale-Jennings	4,100	4,175
Other pools	76,750	76,200
Total Oklahoma	603,000	608,825

First Reports

New work in Pontotoc County: Continental Oil Co. No. 1 Thompson, NW NW SE section 2-1n-7, location; same company's No. 2 Brown, NW NW NE section 11-1n-7, location; Amerada Petroleum Corp. No. 10 Woolley, SW SW NE section 22-2-7, building rig; Fleetborn & Simpson No. 8-A Woolley, SW NW SW section 27-2-7, drilling at 176 feet; E. H. Moore and others No. 1 McKoy, NE SE SE section 29-2-7, an old well, plugging back, cleaning out.

Amerada Petroleum Corp. No. 6 Woolley, SE NE SE section 21-2n-7, topped Bromide at 4,335

feet; total depth, 4,374 feet; acidized with 15,000 gallons, flowed 549 bbls. of oil in 1 hour and 30 minutes, made potential of 1,964 bbls., but was not a completion. J. E. Crosbie No. 2-B Burris, CWL SE section 22-2n-7, topped Hunton lime at 3,574 feet, was bottomed at 3,591 feet; acidized with 10,000 gallons and was waiting on results. Sinclair Prairie Oil Co. No. 16 Woolley B, NE NE SW section 22-2n-7, flowed 564 bbls. of oil gross in two hours after acidizing with 10,000 gallons and was shut in. It topped Hunton lime at 3,632 feet; total depth, 3,775 feet. H. L. Blackstock No. 5-A Moody, NE SW SW section 23-2n-7, topped Hunton lime at 3,517 feet; Sylvan shale, 3,895 feet; total depth, 3,895 feet; acidized with 10,000 gallons and flowed 560 bbls. of oil gross in two and one-half hours; reacidized with 10,000 gallons and flowed 668 bbls. of oil gross in the first hour. Amerada Petroleum Corp. No. 5 Smith, SE SW NW section 28-2n-7, acidized with 12,000 gallons and flowed 496 bbls. of oil net in the first one and one-half hours. It topped Hunton lime at 3,264 feet; Sylvan shale, 3,525 feet; total depth, 3,535 feet.

Okfuskee County

Eight new oil wells were completed in the Olympic field, Okfuskee County. Manahan Oil Co. No. 16 Dalton, NE NE SW section 36-10-8, topped Senora sand at 1,747 feet; total depth, 1,752 feet; shot and flowed 245 bbls. of oil, with 30 bbls. of water, in 24 hours.

Blackwell Oil & Gas Co. and Phillips Petroleum Co. No. 1 Lehmer, NW cor. section 17-10-9, was shot and pumped 64 bbls. of oil in 24 hours. It topped Senora sand at 1,860 feet and was bottomed at 1,915 feet. Chapman & McFarlin No. 3 Yarbrough, NE SE NE section 18-10-9, topped Senora sand at 1,878 feet; total depth, 1,913 feet; shot and flowed 107 bbls. of oil in the first 18 hours. Later, it pumped 64 bbls. of oil in 24 hours. Same operators' No. 7 Yarbrough, NE NW NE section 18-10-9, pumped 171 bbls. of oil in 24 hours after a shot. It topped Senora sand at 1,859 feet and was bottomed at 1,882 feet.

J. J. Deaner No. 3 Schultz, NE SE NW section 18-10-9, topped Senora sand at 1,845 feet; total depth, 1,897 feet; shot and pumped 125 bbls. of oil and 31 bbls. of water in 24 hours. Rogers Oil & Gas Co. and Ark Royalty Co. No. 3 Yarbrough, NW NE NE section 18-10-9, was shot and pumped 67 bbls. of oil in 24 hours, producing from Senora sand, topped at 1,868 feet; total depth, 1,910 feet. Oklahoma Oil Corp. No. 1 Ott, SW NW NW section 19-10-9, swabbed 96 bbls. of oil and 24 bbls. of water in 24 hours and later pumped 101 bbls. of oil and 15 bbls. of water in 24 hours. Top of Senora sand was 1,886 feet; total depth, 1,895 feet.

Chapman & McFarlin No. 7 Williams, NE SW NW section 30-10-9, had Senora sand at 1,737 feet; total depth, 1,777 feet; shot and flowed 226 bbls. of oil in 18 hours, later pumping 228 bbls. in 24 hours. Mid-Continent Petroleum Corp. No. 1 McKerman, NW NE SE section 24-12-8, an old well, was deepened from 3,218 feet to Hunton lime at 3,979 feet; total depth, 4,015 feet; produced 1,000,000 feet of gas and was recompleted.

New Olympic Tests

First reports of new work in Okfuskee County: Manahan Oil Co. No. 1 Bunner, SE NE NE section 24-10-8, location; Ross Oil Co. No. 1 Bunner, NE NE SW section 24-10-8, location; Blackwell Oil & Gas Co. and Phillips Petroleum Co. No. 1 Lehmar, SE SW SE section 7-10-9, rigging up rotary; Ark Royalty Co. No. 2 Brooks, SE NE SW section 18-10-9, cellar and pits; same company's No. 7 Fisher, SW NW SE section 18-10-9, spudded; Sinclair Prairie Oil Co. No. 2 Schultz, SW NE NW section 18-10-9, rig; Oklahoma Oil Corp. No. 3 Ott, NE NW NW section 19-10-9, location; same operator's No. 4 Ott, NW cor. section 19-10-9, location; Chapman & McFarlin No. 6 Williams, SE NW NW section 30-10-9, spudded.

Manahan Oil Co. No. 1 Bunner A, SE cor. section 24-10-8, topped Senora sand at 1,837 feet; total depth, 1,850 feet; shot with 15 quarts and was cleaning out. Stanolind Oil & Gas Co. No. 6 Bunner, NE cor. section 25-10-8, topped Senora sand at 1,828 feet; was bottomed at 1,848 feet, with 400 feet of oil in the hole, and was preparing to shoot. W. A. Delaney and others No. 2 Lewis, SW SE SE section 7-10-9, was cleaning out after shooting with 60 quarts. It topped Senora sand at 1,863 feet; total depth, 1,898 feet. Ark Royalty Co. No. 2 Parsons, SW SW NE section 18-10-9, topped Senora sand at 1,848 feet; total depth, 1,900 feet; shot with 60 quarts and swabbed at the rate of 10 bbls. of oil an hour. Sinclair Prairie Oil Co. No. 1 Schultz, SE NE NW section 18-10-9, flowed 70 bbls. of oil in nine hours after a 30-quart shot; it topped Senora sand at 1,842 feet; total depth, 1,851 feet. Chapman & McFarlin No. 4 Williams, NW cor. section 30-10-9, topped Senora sand at 1,766 feet; total depth, 1,799 feet; shot with 50 quarts and was cleaning out.

Seminole County

Completions in Seminole County included two new wells in the North Bethel pool. C. J. Wrightsman No. 3 May, NE SW SW section 25-10-7, extended production one location north. It topped Cromwell sand at 3,622 feet; total depth, 3,629 feet; and made potential of 1,547 bbls. of oil, with 1,250,000 feet of gas. Amerada Petroleum Corp. No. 2 Pryor, SW NE NW section 36-10-7, in the southeast trend of the pool, topped Cromwell sand at 3,625 feet, was bottomed at 3,643 feet and made potential of 1,329 bbls. of oil.

In the Searight area, Texas Co. deepened No. 7 Mayhue, NW NE NW section 14-9-6, an old well, from 3,904 feet to 4,145 feet, and recompleted it as a 40-bbl. pumper. It topped Wilcox sand at 4,130 feet.

Pioneer Drilling Co. No. 1 Jarvis, SW NE SE section 35-11-5, North Earlsboro area, topped Wilcox sand at 4,693 feet and was dry and abandoned at 4,710 feet, total depth.

The following new work in Seminole County was reported: D. Malarnee and others No. 2 Flowers, SW SE SW section 29-7-6, location; Sinclair Prairie Oil Co. No. 1 Blair, NE NW NW section 32-7-6, building rig; E. W. Jones No. 1-A Berry, SW NW NW section 2-8-5, an old well, deepened

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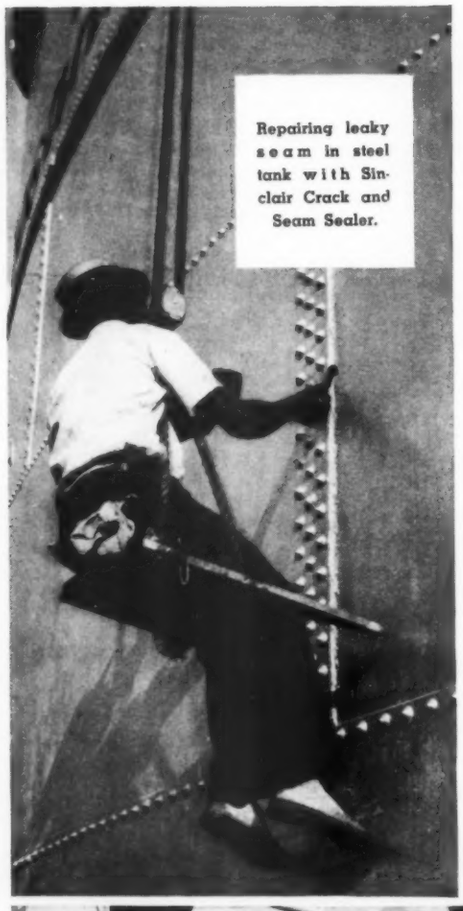

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from 4,165 feet to 4,182 feet and shot, but with no increase in production; Sinclair Prairie Oil Co. No. 1 Lindsay, NW SW NW section 3-8-7, rig; Pure Oil Co. No. 14 Strothers A, NW SW SW section 26-9-6, an old well being deepened, drilling at 4,051 feet; Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Fore A, SW cor. section 12-9-7, wildcat, building rig.

Dave Malarnee and others No. 1 Huddleston, NW NE NW section 32-7-6, was bottomed at 2,968 feet and swabbed 20 bbls. of oil in the first 22 hours; 75 bbls. in the next 24 hours; 135 bbls. in the next 24 hours; 35 bbls. in the next eight hours and was installing pump. Pure Oil Co. No. 1-A Townsend, SW SW NE section 12-8-5, topped second Wilcox sand at 4,371 feet; total depth, 4,382 feet; water intruded; plugged back to 4,099 feet; shot and acidized with 4,000 gallons and was waiting on results. Magnolia Petroleum Co. No. 3 fee, NE SW SW section 9-9-7, topped Cromwell sand at 3,462 feet; total depth, 3,490 feet; swabbed 50 bbls. of oil in 24 hours; shot with 10 quarts and was cleaning out. Texas Co. No. 3 Grisso, NE NW NW section 16-9-7, topped Cromwell sand at 3,435 feet, and flowed 61 bbls. of oil in six hours while drilling at 3,451 feet.

Osage County

Phillips Petroleum Co. No. 3 Sausen, NE SE NE section 27-26-6, South Burbank area, Osage, found Bartlesville sand at 2,856 feet, had oil pay at 2,818-25 feet, total depth, and after shooting made potential of 146 bbls. of oil, completed.

Midco Oil Corp. No. 5 Osage, C E half SW SW section 17-22-10, North Wildhorse area, topped Mississippi lime at 1,955 feet; was bottomed at 2,067 feet; plugged back to 2,031 feet. It was shot and flowed and pumped 135 bbls. of oil in 24 hours. Continental No. 3 Osage, SE NW SE section 5-23-9, an old well, was deepened from 2,150 feet to 2,445 feet, where it had a hole full of water; plugged back to 2,418 feet and recompleted. It pumped 4 bbls. of oil per day from Burgess sand at 2,130-50 feet.

Oklahoma Natural Gas Corp. No. 1,846 Osage, SE NE NW section 4-21-11, topped Bartlesville sand at 1,602 feet; Mississippi, 1,854 feet, and was dry and abandoned at 1,905 feet, total depth.

Indian Territory Illuminating Oil Co. No. 47 Osage SW NW NE section 35-29-11, was bottomed at 920 feet, plugged back to 890 feet and completed as a repressure well. Johnson Oil Refining Co. No. 19 Osage, SE NW SE section 30-21-9, was completed as an input well at 329 feet, total depth. Same company's No. 20 Osage, SE NW SE section 30-21-9, was completed as an input well at 329 feet, total depth.

Three new operations were reported in Osage County. Peters Petroleum Corp. and Sinclair Prairie Oil Co. No. 14 Osage, SW SE NW NE section 24-24-7, was a location. Lewis Production Co. No. 13 Osage, NW SE NE section 28-24-7, was a location. Gulf Oil Corp. No. 3 Revard, NW NW SE section 26-26-6, was a location.

Noble County

Phillips Petroleum Co. and Shell Petroleum Corp, completed No. 1 Hackett, NW NE SE section 21-23-2w, Billings pool, Noble County, at total depth at 4,333 feet, in Wilcox sand topped at 4,307 feet. It flowed 1,023 bbls. of oil in six hours, making potential of 4,047 bbls. Gas averaged 4,250,000 feet. It is in the south line of production at Billings.

Logan County

Sinclair Prairie Oil Co. No. 2 Shaffer, SE SE SW section 28-17-4w, Crescent field, Logan County, had first Wilcox sand at 6,490 feet and was bottomed at 6,514 feet. It flowed 342 bbls. of oil in four hours, making potential of 1,432 bbls. It later was shot and acidized, but was completed for original potential. Gas was estimated at 3,000,000 feet.

Cleveland County

Helmerich & Payne No. 1 Glenn, C NW NE section 6-8-1w, wildcat in Cleveland County, topped Wilcox sand at 7,556 feet, had some salt in cores and was dry and abandoned at 7,584 feet, total depth. It is southeast of Norman. Other tops: Pawhuska, 3,180 feet; Oread, 4,170 feet; Layton, 4,835 feet; Oswego, 6,270 feet; Chattanooga, 6,690 feet; Hunton, 6,713 feet; Sylvan, 7,080 feet; Viola, 7,186 feet; Simpson dense, 7,260 feet; Dolomite, 7,295 feet.

Palace Oil Co. No. 1 Tharnbraugh, SW NW SE section 31-9-1w, was an abandoned location.

Sinclair Prairie Oil Co. and others No. 3 Marvel, NW NE NE section 21-10-2w, Moore field, was a cellar and digging pits.

Kay County

Clark & Nye No. 1 Orr, SW SW NE section 5-28-1w, Braman area, Kay County, had Layton sand at 2,773-91 feet, total depth. It flowed 215 bbls. of oil in the first 24 hours after a shot with 10 quarts. It was shot again with 15 quarts and swabbed and flowed 250 bbls. of oil in 24 hours, and was completed, swabbing and flowing 200 bbls. daily.

Pawnee County

L. W. Hay No. 1 Bolton, NW SE SE section 23-20-9, Keystone district, Pawnee County, had Bartlesville sand at 2,090 feet, but had a hole full of water at 2,160 feet, total depth, and was dry and abandoned.

Remington Drilling Co. No. 1-A Lincoln, C E half NW SE section 26-20-9, was drilling at 158 feet.

Garvin County

Allen Huckelberry and C. Carter No. 2 Wood, SE NE SW section 5-4-3, northeastern Garvin County, topped Wilcox sand at 3,712 feet, driller's top, and was dry and abandoned at 3,837 feet, total depth.

Hughes County

C. J. Wrightsman No. 1 Diamond, NE NE SE section 33-9-9, wildcat in northwestern Hughes County, had a fishing job at 3,475 feet, total depth, and was abandoned. It topped Senora sand at 1,320 feet; Booch, 2,640 feet; Gilcrease, 2,880 feet; Wapanucka, 3,297 feet; first Cromwell, 3,301 feet; second Cromwell, 3,344 feet; and had a stain of oil in sand at 3,390-3,405 feet.

New work in Hughes County: Southwest Gas Utility Co. No. 2 Foster, NW SE SE section 11-7-8, location; Winona-Jarvis-Holm No. 1 Harjo, SW SE NW section 20-7-8, rigging up rotary; C. J.

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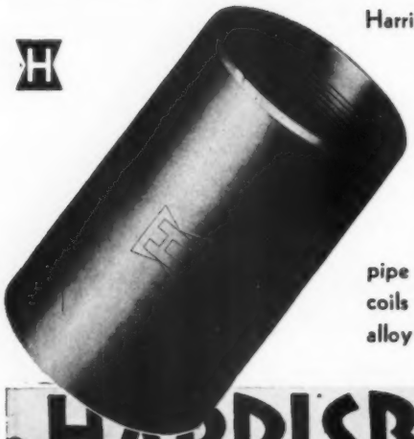

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Wrightsman No. 1-A Diamond, NE NE SE section 33-9-9, wildcat, drilling at 805 feet.

Pottawatomie County

Paul Traugh and others No. 1 Tarman, NW SW NW section 29-6-5, Pottawatomie County, topped sand at 2,451 feet and was bottomed at 2,483 feet. After a shot it swabbed 65 bbls. of oil in eight hours; was put on the pump and completed as a 10-bbl. well. Production was from Earlsboro sand.

Darby Petroleum Corp. No. 2 Nixon, SE SW SW section 9-7-4, an old well, was rigging up standard tools.

Creek County

The largest of three wells completed in Creek County was Giblin and others No. 3-A Vance, SE SE SW section 6-18-7, Cushing-Drumright area. It topped Mississippi lime at 2,540 feet; had a hole full of water at 2,565½ feet, total depth; plug back to 2,560 feet; shot and acidized, and pumped 40 bbls. of oil and 60 bbls. of water in 24 hours. Freeland and others No. 1-A Carman, SW SE NE section 25-17-8, had Jones sand at 1,463-1,502 feet, total depth, swabbed 20 bbls. of oil in three hours and later pumped 6 bbls. in 24 hours. Elliott Brothers No. 3 Carothers, C S half NE SE section 18-19-9, had Bartlesville sand at 2,400-2,455 feet, total depth; plugged back to 2,440 feet, and pumped 2 bbls. of oil daily.

New work in Creek County: Deep Rock Oil Corp. and others No. 1-A Kimbley, NW NE NE section 15-14-10, building rig; Sinclair Prairie Oil Co. and Mid-Continent Petroleum Corp. No. 1 Pressure, CSL SW SW section 15-17-7, drilling at 1,965 feet; Royal Oil & Gas Corp. No. 1-A Berryhill, NW NW SE section 18-17-11, drilling at 2,474 feet; D. W. Franchot and others No. 1 Franklin, SE NW SE section 20-18-9, moving in machine; M. S. Hughes No. 5 Finchum, NE NW SW section 11-19-9, rig on ground; Johnson Oil Refining Co. No. 5 Finchum, NW NE SW section 11-19-9, drilling at 385 feet.

Muskogee County

Zaw Oil Co. No. 1-A Brantley, NE NW SE section 14-14-16, Boynton area, Muskogee County, had initial production of 20 bbls. of oil from sand at 1,512-26 feet, total depth. Production settled to 5 bbls. of oil and 3 bbls. of water daily. Robinson Oil Corp. No. 6 McKee, NW NW SW section 17-13-16, South Boynton area, had sand at 2,097 feet; total depth, 2,105 feet, and was completed with initial production of 35 bbls. of oil daily. M. S. Mussellem No. 1 Jennings, NW NW SW section 4-13-19, Brushy Mountain area, was bottomed at 1,477 feet; plugged back to 1,378 feet; shot, produced 5 bbls. of oil daily and was completed. Jack Summers No. 1-A Jefferson, NW NE NE section 6-15-15, Haskell district, was dry and abandoned at 1,350 feet, total depth.

Okmulgee County

F. D. Misener No. 11 Francis, SE SW NW section 11-15-14, Morris sector, Okmulgee County, had sand at 1,476 feet; total depth, 1,503 feet; and produced 500,000 feet of gas, completed.

New work in Okmulgee County: E. E. Blaise No. 8 Fox, C NE NW section 22-13-14, an old well, was to be deepened: Penrod and others No. 11 Fox, SE SE NW section 22-13-14, an old well being deepened, drilling at 2,642 feet; Reed Ramsey No. 1-A Schacht, NE SE SW section 22-14-14, spudded; Williams and others No. 5 Barnett, SW SE SE section 29-15-11, rigging up machine; W. B. Pine No. 1-A Beams, SE cor. section 4-15-14, drilling at 1,609 feet; F. D. Misener No. 20 Larney, NE cor. section 28-15-14, rigging up.

Tulsa County

Gillmont Oil Co. No. 1-A Gregory, C N half SW NE section 23-18-12, Jenks area, Tulsa County, topped Arbuckle lime at 2,107 feet, had a showing of water at 2,152 feet, total depth, and was abandoned.

A. C. Saint and others No. 1-A Wadsworth, SW NE NE section 31-17-13, was a machine.

Lincoln County

Two new tests were reported in Lincoln County. Gulf Oil Corp. No. 1 Pecks, NW NW SW section 36-15-2e, was digging cellar and pits. Mag-

(Continued on Page 86)

East and East Central Texas

By L. E. BREDBERG

MOST TALCO WELLS ON PUMP; SULPHUR BLUFF WELLS FLOW

DALLAS, Tex., Feb. 28.—The only important wildcat locations in the eastern Texas district this week were for Trinity tests. The best looking structures in the district have been tested for Woodbine sand production. Where the Woodbine sand was barren, such structures were not condemned as to deeper pay possibilities, consequently a number of them are again being drilled, this time in quest of Trinity (Paluxy or Glen Rose) production.

The Humble Oil & Refining Co. staked a location on the L. K. Riggs farm in the William Daniels Survey, on the northeast edge of the producing area in the Van field, Van Zandt County. This will be the second deep test on that side of the field, the American Liberty Oil Co., George Greer and others having drilled one on the J. A. Freeman tract, in the J. Walling Survey. One other Trinity test has been drilled near the Van field. The Pure Oil Co. sank this test several years ago on the northwest side of the field. It proved "salty" and was abandoned.

Another deep test was announced by the Pure Oil Co. in the Mexia field. This will be No. 16 W. B. Kendrick, 1,470 feet from the most southerly southeast line and 723 feet from the most westerly southwest line of a 96-acre lease in the Pedro Varella Survey, Limestone County, about 3 miles west of the town of Mexia and near wells producing from the Woodbine sand. It is scheduled to be drilled to 8,000 feet, and will make the fifth test for deep production in the Mexia field. None of the others were commercial producers, although two of them showed some oil.

Other Trinity tests of interest are those drilling in the Blackfoot area. One in Anderson County is being drilled by American Liberty Oil Co. and Tom F. Hunter; one by Humble Oil & Refining Co. and others in the Opelika area, Henderson County; the Superior Oil Co.'s test in eastern Hunt County, which uncovered salt water in the Paluxy sand, and the Rains County test of Humble Oil & Refining Co. and others on the Easter lands which is down 8,400 feet with nothing yet showing. An interesting deep test in the Long Lake field, Anderson County, is being drilled by Tide Water and others.

Abandonments

Two wildcats were abandoned, one in Freestone County and the other in Cherokee County. The latter test was drilled by the General Crude Oil Co. on the O. A. Braley farm in the J. Thomas Survey, 1 mile northeast of Nixon. It topped the Woodbine at 4,276 feet and was abandoned at 4,282 feet. Elevation is 359 feet. This is the second failure the company has recently drilled in this area.

The other abandonment was made by the Evert Drilling Co. and others on the O. W. Killam farm, in the E. J. Robins Survey, 6½ miles southeast of Fairfield in Freestone County. It was given up as dry at a total depth of 5,158 feet. Elevation is 368 feet.

North of Bonham and Dodd City in Fannin County, a large block has been assembled by A. L. Chaffin and J. Q. Stewart for a 4,500-foot test.

Falls County

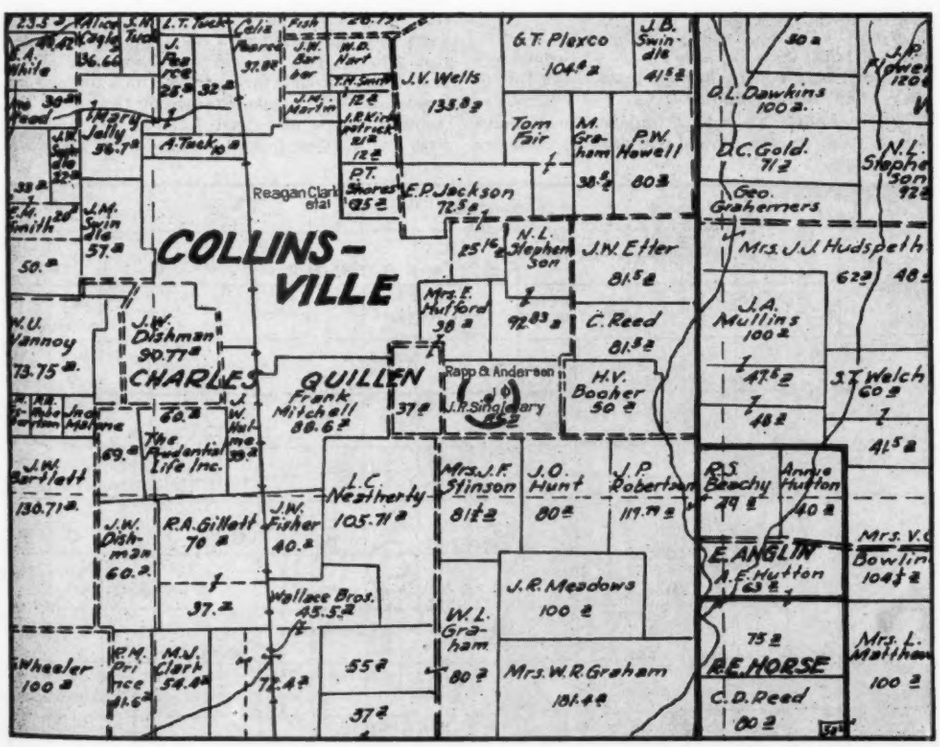
The wildcat test of A. H. Bell and others on the C. L. Trice lands, in the F. Mayham Survey, 1 mile east of Lott, is showing for a small producer from the Buda lime, with total depth of 1,220 feet. It is on a block of some 4,000 acres. Buda lime production in this area is not considered important as the wells are small and do not produce over a long period of time.

Talco and Sulphur Bluff Fields

Eleven locations were staked in the Talco field, in northwestern Titus and northeastern Franklin counties. Activities are increasing in this field, although only three wells were completed during the past seven-day period, all of which were pumpers. Practically every well completed in the Talco field is a pumper, whereas there is not a well pumping in the Sulphur Bluff field, 18 miles to the southwest in Hopkins County. One well was completed in Sulphur Bluff in the past week, flowing 60 bbls. per hour, or a better producer than all three wells completed in the Talco field.

East Texas Field

Forty-two completions were reported from the East Texas field, two of which proved dry holes, seven were pumpers and one completed on air lift. During the same period there were 37 locations reported for the field. The density of the field is now one well to approximately every 5 acres with the Railroad Commission granting more permits for drilling wells in exception to the spacing rule designated for the field.



Discovery well near the town of Collinsville in southwestern Grayson County, which has created renewed interest in this part of the North Texas district. Another test is to be drilled a short distance north of this discovery, at once.—(Map courtesy Southwest Mapping Co., Fort Worth, Texas)

COMPLETIONS IN EAST CENTRAL TEXAS

Cherokee County

General Crude Oil Co. No. 1 O. A. Braley, dry and abandoned 4,282 feet, elevation 359 feet, 1 mile northeast of Nixon, top Woodbine 4,276 feet.

Freestone County

Evert Drilling Co. No. 1 O. W. Killam, dry and abandoned 5,158 feet, elevation 368 feet, 6½ miles southeast of Fairfield.

Hopkins County

Jones and others No. 3 J. K. Pierce, 4,506 feet, 60 bbls. per hour.

Red River County

M. Petroff and others No. 1 Norris, 2 miles west of Detroit, location abandoned.

Titus County

Humble Oil & Refining Co. No. 1 G. A. McPeters, 4,352 feet, 117 bbls. in 20 hours, on pump. K & A Oil Co. No. 1 King, 4,313 feet, 11 bbls. per hour on pump. Magnolia Petroleum Co. No. 4 K. Mainard, 4,295 feet, 377 bbls. in 24 hours, on pump.

EAST TEXAS COMPLETIONS

Gregg County

B. Fields No. 3 Blackstone, 3,564-96 feet, 80 bbls. per hour. Sabinas Oil Co. No. 6-B Falvey, 4,704-10 feet, 25 bbls. in 30 minutes. Shell Petroleum Corp. No. 26 King, 3,549-3,607 feet, 25 bbls. in 20 minutes. Stanolind Oil & Gas Co. No. 20 Hopkins, 3,545-3,610 feet, 64 bbls. per hour; No. 14 Whatley, 3,476-3,528 feet, 96 bbls. per hour. H. R. Smith No. 12 Banknight, 3,580-3,610 feet, 20 bbls. in 20 minutes.

Sun Oil Co. No. 37 Haynes, 3,579-3,618 feet, 80 bbls. per hour. Barnsdall Oil Co. No. 14 Douglas, 3,672-73 feet, 13 bbls. in 30 minutes. Humble Oil & Refining Co. No. 20 Thomas, 3,565-3,602 feet, 54 bbls. per hour. Iowa-Payne Oil Co. No. 7 Walker, 3,666-67 feet, 38 bbls. in 90 minutes. Kinso Oil Co.

(Continued on Page 82)

North Louisiana, Arkansas

NEW SATURATED-GAS AREAS FOUND IN NORTH LOUISIANA

By MITCHELL TUCKER

SHREVEPORT, La., Mar. 1.—The opening of three new deep Travis Peak saturated-gas areas in central North Louisiana constituted the important developments for the week, while attention continues to center upon the opening of Marion County, Texas, to oil and gas production.

The Travis Peak section of the Lower Trinity proved productive of gas and distillate in the Sibley field of Webster Parish, which has already been proven for prolific gas and distillate production in the Lower Glen Rose. In Bienville Parish the Travis Peak also proved productive of huge volumes of gas and distillate at two wildcat wells, one about 6 miles south of Arcadia and the other about 5 miles to the west near Bearcreek.

Rodessa Production

The Louisiana Department of Conservation has announced that the March Rodessa allowable for that side of the field will remain at 50,000 bbls. daily. That this volume of withdrawal has not been detrimental to the reservoir pressure was indicated by the last periodical bottom hole pressure surveys. The Texas side of the Rodessa field received a 4,925 bbl. daily increase for March to conform with the statewide increase. This boost in allowable will permit 39,400 bbls. daily production from that portion of the field.

As of February 15, 1937, the Rodessa field has produced approximately 26,775,230 bbls. of oil, 22,450,345 bbls. of which was from the Louisiana side and 4,625,400 bbls. from the Texas side, after slightly over one and one-half years' life. The daily production from the Texas side of the field is steadily approaching that from Louisiana. Largely due to the wider well spacing on the Texas side (50 per cent of allowed production is allocated upon an acreage basis) the per-well average on that side of the field is much larger than in Louisiana now. For the past seven-day period Louisiana wells averaged 144 bbls. per well per day, while Texas wells averaged 185 bbls, or an overall average of 157 bbls. per well per day.

Daily average pipe line runs from the field for the seven-day period ending February 25 were as follows:

LOUISIANA

	Ave. daily P. L. runs
Standard Oil of La. to Baton Rouge	22,085
Arkansas-La. Gas Co. to Bossier City	1,405
Caddo P. L. Corp. to Rodessa	60
East Texas Ref. Co. to Rodessa	466
Griswold Ref. Co. to McCoy	625
Gulf Pipe Line Co. to Potter Point and south	5,484
La. Tex. P. L. Co. to Lewis, Shoreline Ref.	205
Magnolia Pipe Line to Beaumont	11,557
United Pipe Line to Longview	5,287
Total	47,174

TEXAS

Gulf Pipe Line Co. to Potter Point and south	9,514
La. Tex. P. L. Co. to Lewis, Shoreline Ref.	2,405
Magnolia Pipe Line to Beaumont	14,071
Texas Pipe Line Co. to Oil City and Port Arthur	2,794
United Pipe Line to Longview	7,965
Southern Liberty gathering system	250
Total	36,999

Outpost Progress

Lion Oil Refining Co. has staked location for No. 1 Holm, NW SE SE section 9-23-15, Caddo Parish, for an outpost test at the extreme northeastern edge of the Rodessa field, and one location west of Idessa Oil Co. No. 1 D. K. Sumner, NW SW SE section 10-23-15, which is now shut down at 6,197 feet.

Long & Westbrook No. 1 N. S. Spearman, NW SE section 14-23-15, about 3 miles southeast of the northeasternmost production, topped the hard chalk rock at 2,460 feet, and has been shut down for orders.

J. Edward Jones No. 1-B Sharp, NW section 4-23-16, outpost test of the North Rodessa area, and one-fourth of a mile from the Arkansas line, showed itself for an oil producer after topping the Gloyd at 5,934 feet and coring saturated 5,980-94 feet. Seven-inch casing was set at 5,965 feet and casing perforated with 83 shots, after which hole is washed and swabbed.

Marion County, Texas

Holcomb & Thomason, Flesh & Hootkins No. 1 Lizzie Henderson, R. Bennington Survey, Marion County, Texas, oil and gas discovery well north of Jefferson and 13 miles southwest of Rodessa production, is swabbing and testing the oil-saturated section after placing a squeeze job upon the gas horizon above. Cement retainers were placed above and below the perforations opposite the gas section, and retarded action cement pumped back into the formation at high pressures. It is hoped to bring the well back on oil production by swabbing.

Arkansas-Louisiana Gas Co. No. 1 W. S. Ford, Charles Grayson Survey, Marion County, important test of the Lodi structure midway between Rodessa and the Jefferson discovery, set 7-inch pipe at about 6,351 feet, in black shale. The entire zone of multiple sands in the Lower Glen Rose were drilled and cored carefully, and it is planned to perforate opposite attractive points of saturation as soon as cement has set.

Rodessa Completions

No completions were made on the Louisiana side of the Rodessa field in the last week.

Ohio Oil Co. No. 18 R. P. Willis, S.F.I.W. Survey No. 1,263, Case County, Texas, was completed flowing 17 bbls. hourly through quarter-inch tubing choke, total depth, 5,935 feet.

The Texas Co. No. 8 N. A. Rambo, Cass County School Land Survey, flowed 370 bbls. in 24 hours through quarter-inch tubing choke on completion test, total depth 6,015 feet.

United Production Co. No. 5 J. A. Bewley, H. Holbert Survey, flowed 20 bbls. hourly through three-fourths inch tubing choke, tubing pressure, casing pressure 457 pounds, total depth 6,005 feet.

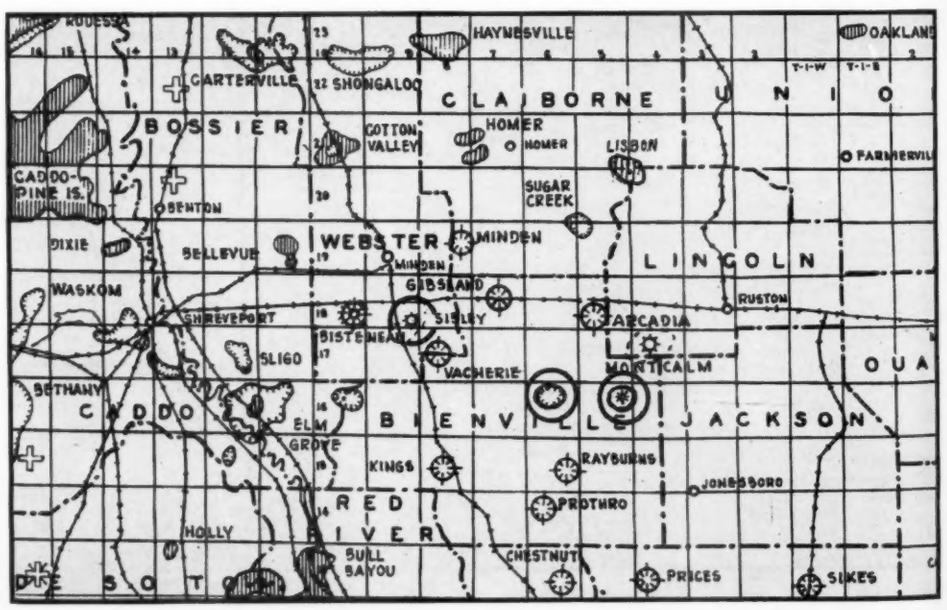
United Production Co. No. 6-A Tyson, flowed 16 bbls. in three hours on initial test, one-eighth inch tubing choke, tubing pressure 1,800 pounds, casing pressure 1,950 pounds, total depth 6,055 feet.

United Production Co. No. 2 S. B. Willis, Wilson Robinson Survey, flowed 33 bbls. per hour initially through three-eighths inch tubing choke, total depth 6,037 feet.

Bienville Parish

Seaboard Oil Co. opened the Bearcreek area to prolific gas and distillate production last week in No. 1 McGee, center section 3-16-6. This well was formerly abandoned at 5,905 feet but was recently deepened for a test of the Travis Peak. After topping that section of the Lower Trinity at 6,965 feet several porous and saturated sands were logged to a total depth of 8,017 feet. The 7-inch casing was cemented at 7,537 feet and casing perforated at 7,323-33, 7,344-55 and 7,448-7,463 feet. On a drill stem test at 7,280-7,462 feet, an estimated volume of 70,000,000 feet of gas was obtained through three-eighths inch top and bottom choke, 475 pounds pressure on testing tool. The gas carried heavy distillate saturation. Plugs will be set and additional testing carried on.

Lide & Greer No. 1 Smelley, SE SW NE section 13-16-5w, opened the Travis Peak section to huge gas and distillate production last week on their large block of acreage south of Arcadia. Topping this section of Lower Trinity at 7,139 feet, gas sand was penetrated at 7,160 feet, and drill stem test 7,163-93 feet showed 50,000,000 feet of saturated gas through three-eighths inch top and bottom choke, 425 pounds pressure on the casing tool. Another gas sand logged 7,218-40 feet and drill stem test 7,205-40 feet showed good gas and distil-



Three new gas distillate discoveries made in North Louisiana during the last week are indicated by circles.—(Walter E. Wylie, Maps, Shreveport)

late saturation. Hole is now being reamed to total depth of 7,240 feet preparatory to drilling deeper.

Estimated Daily Production

Estimated daily production in the week ending February 27 was as follows:

NORTH LOUISIANA

Bellevue	760
Caddo light	3,810
Caddo heavy	2,465
Converse	875
Cotton Valley heavy	270
Cotton Valley light	530
De Soto and Red River	1,385
Elm Grove	340
Haynesville	3,510
Holly	145
Homer	2,570
Pleasant Hill	135
Rodessa	48,730
Sarepta-Carterville	340
Sligo	275
Urania	2,750
Zwolle	815
Total	69,795

SOUTH ARKANSAS

Champagnolle	1,985
El Dorado	2,020
Lisbon	275
Miller County	580
Nevada	725
Smackover light	2,080
Smackover heavy	17,510
Stephens	600
Troy	150
Urbana	1,550
Total	27,475

Texas side of Rodessa field, 38,530 bbls. daily.

Bossier Parish

Arkansas-Louisiana Gas Co. No. 1 W. H. Davis, NW NE NW section 8-17-11, Bossier Parish, was completed as a 33,320,000 foot gasser, 1,800 pounds rock pressure, total depth 4,450 feet in Lower Glen Rose, plugged back from 5,222 feet. This well was acidized three times. After the first chemical reaction it tested 100,000 feet; second charge 10,000,000 feet, and third 30,320,000 feet. Formerly it had been drilled to 5,222 feet for a test of the Pettitt sand, but this section on the northeast flank of the Sligo gas field proved nonproductive of oil.

Caddo Parish

Negotiations are underway for deepening Shreveport Oil Corp. No. 1-D Muslow, section 5-20-15, situated 2 miles northeast of Oil City in the heart of the large Caddo field. This well is at present temporarily abandoned at 4,745 feet, but it is contemplated deepening to the Travis Peak sands.

Stanolind Oil & Gas Co. continues active in gathering leases in Township 22, Range 15, where they plan a deep test of the Pine Island field. Lion Oil Refining Co. is also prominent in the leasing activity nearby.

Gulf Refining Co.'s important Cross Lake test on the outskirts of Shreveport, No. 1 E. P. Hatcher, SW SE section 11-17-15, drilled and cored a porous sand 8,648-8,760 feet in the Lower Marine Travis Peak section. No saturation was reported but the logging of this sand with porosity of from 12 to 14 per cent was regarded significant. Drilling continues below 8,850 feet.

LaSalle Parish

Placid Oil Co. No. 3 Louisiana Central Lumber Co., NE SE section 8-10-4e, east of the Urania field, LaSalle Parish, topped Wilcox sand at 1,799 feet and found it dry to the total depth, 1,811 feet, where the hole was plugged and abandoned.

Claiborne Parish

Magnolia Petroleum Co. has assembled a 7,000-acre block centering around section 15-23-7, Claiborne Parish, on the northeastern flank of the Haynesville field, after seismograph survey. No announcement of a test on this block has as yet been made.

In eastern Claiborne Parish, 7 miles southeast of Summerville, Marsh & Hanna of El Dorado, Ark., plan an early deep test of their 7,000-acre block recently assembled.

The Lisbon field has taken on activity, with four wells drilling and the production from E. T. Oakes and H. D. Easton's discovery well holding up remarkably at around 200 bbls. daily. Ray Oden No. 1 Patton, SW SE SE section 36-21-5, is drilling at 2,450 feet, Lisbon Oil No. 1 Burgess, NE SE NE section 3-20-5w, drills at 2,000 feet, Red Iron Drilling Co. No. 1 Patton, SW NE section 36-21-5w, has set 10-inch at 849 feet, and Lyons & Neely are drilling at about 2,000 feet in No. 1 Patton, NE NW SW section 36-21-5w, all of which promise early proving of the Lisbon field as a major producing area in North Louisiana. Gulf Refining Co. plan location here soon.

Natchitoches Parish

Natchitoches Oil Co. No. 1 Simpson, section 12-7-7, was junked and abandoned at 2,509 feet, after the derrick was blown down.

Sabine Parish

Earl F. Fox No. 1 Blankenship, NE SE NW section 13-9-12, which reported oil saturation in sand at 3,233-37, made a drill stem test at 3,230-3,305 feet and indicated a small showing of gas. The test is shut down for orders, total depth, 3,305 feet.

Blue Lake Oil Co. No. 1 DeLaney & Wheless, SW section 31-9-13, southern flank of Converse field, has been abandoned as dry, total depth 2,037 feet.

Posey Sisters Oil Co. No. 3 Burkett, an oil well drilled deeper, NE section 19-9-13, has been abandoned at 3,234 feet. It had been deepened from 2,900 feet without finding attractive showings.

Rapides Parish

Dr. R. D. Webb and others of Minden have set surface casing at their No. 1 Brasher, section 22-4n-2w, Rapides Parish, which is proposed as a 6,000-foot test about 8 miles west of Alexandria on their extensive block.

Webster Parish

Red Hawk Oil Co. No. 1 Mayfield, section 9-23-9, proposed deep wildcat test north of the Shongaloo gas field, has been junked and aban-

(Continued on Page 82)

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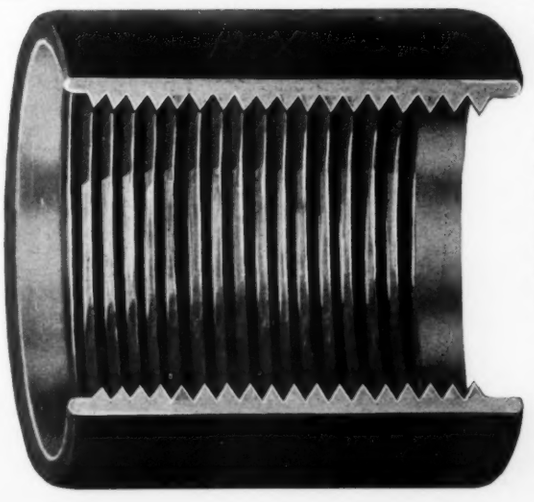

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West and North Texas

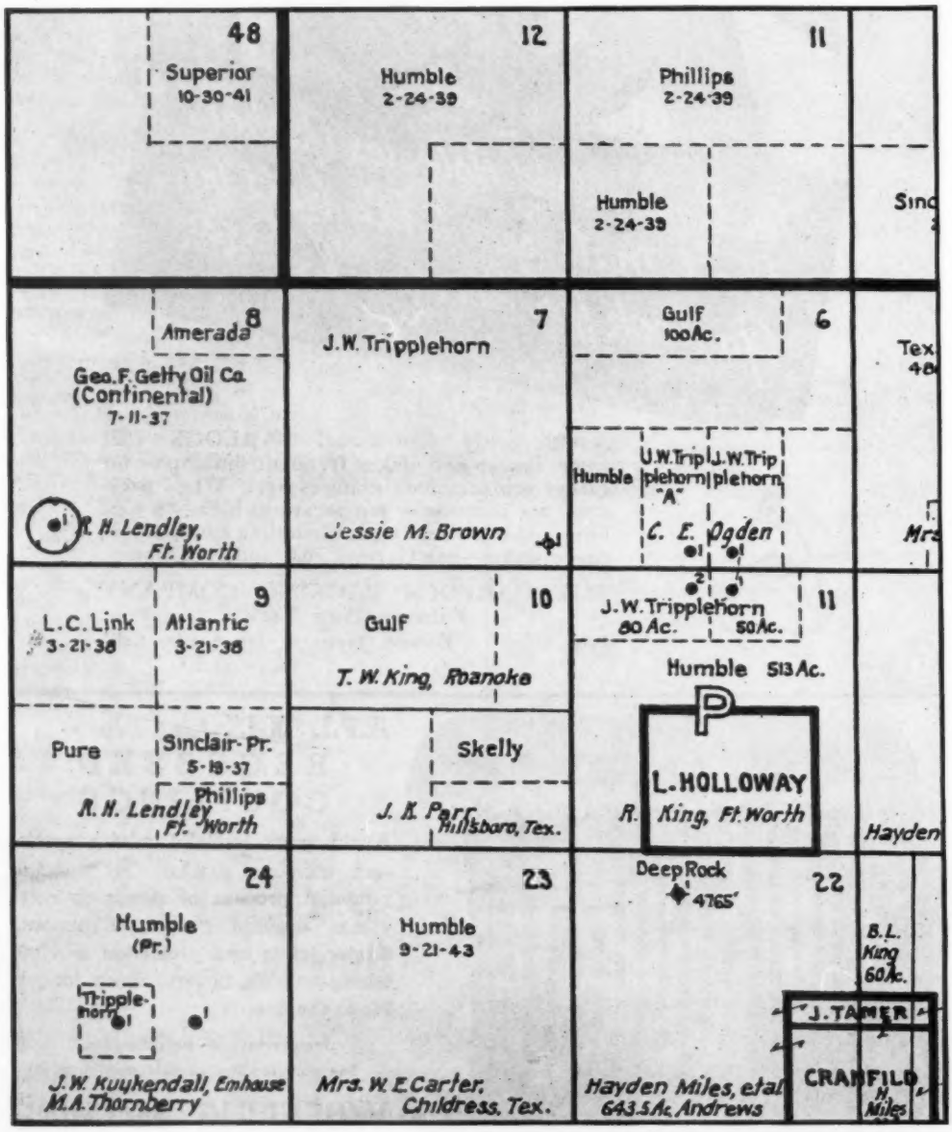
NINETY LOCATIONS IN WEEK ESTABLISHES A NEW RECORD

By L. E. BREDBERG

FORT WORTH, Tex., Mar. 1.—Ninety new locations were staked in the West Texas fields in the past week, a new seven-day record. Most of the drilling that will follow will be in the proven fields of the district in efforts to expand the producing areas and to meet offset obligations. The growing demand for West Texas crude led the Railroad Commission to increase the allowable of some of the fields, which spurred operators on to meet the demand with new work on a large scale. This year will be one of the busiest in the history of the district in efforts to expand pools that have been discovered in the past two years. The Cummins-Goldsmith area in western Ector County is expected to be the scene of boom operations which will make it one of the busiest fields in Texas.

The wildcat producer of George F. Getty, Inc. on the G. E. Moxley ranch, in section 15, Block A-45, P.S.L. Survey, Andrews County, which is 3¼ miles southwest of the Means field and about 4 miles west by north of the Deep Rock field, is the second wildcat or outpost discovery of this company, in this county, within the past two weeks. This test logged oil saturation at 4,680-89 feet, picking up further oil showings in deeper drilling to 4,802 feet, total depth. It was given a 600-quart nitroglycerin shot at 4,460-4,794 feet, and made a head of 70 bbls. of fluid, 40 bbls. of which was oil and the remainder wash water. Later it made another flow, of 25 bbls. of oil, leaving 2,800 feet of oil standing in the hole. It will be placed on the pump, and whether it is to open another field for Andrews County or prove an extension to the Means field or to the Deep Rock pool, will be proven later.

The outpost discovery made a week previously by the same company and in the same county, but in section 8, Block A-46, west of the Deep Rock pool and north of the Humble-Kuykendall oil wells, on the Lindley ranch, pumped for four days, showing a decline in production from 157 bbls. per day to 26 bbls. It was previously given a 210-quart shot of nitroglycerin at 4,612-42 feet, present depth. It will be deepened in the hope of picking up more saturated lime and a heavier pay. It is about 2 miles distant from the Deep Rock and Kuykendall pools.



It is a question whether this discovery well of the George F. Getty Oil Co. opened a new pool or extended one or the other of the pools shown on the map: The Deep Rock pool on the east or the Kuykendall production on the south.—(Southwest Mapping Co., Fort Worth.)

Disappointments

The Landreth-Kirk area, in which there is but one small producer, Gaines County's first oil discovery, in section 22, Block A-21, P.S.L. Survey, 9 miles southwest of Seminole, was given a double setback when a test about 2 miles to the south proved a dry hole, and one about 3 miles to the west also proved a "duster." The Amerada Petroleum Corp. No. 1 C. E. Robbins, in section 9, Block A-22, was given up at a total depth of 4,940 feet, and the Stanolind Oil & Gas Co. No. 1 J. A. Morrow, to the west of the producer, was abandoned at 4,856 feet. A previous dry hole had been abandoned about 1 mile northwest of the discovery, all three of which hedge this pool in on the north, south and west.

About 9 miles north, in the Averitt pool, where there is one lone oil producer, the Shell Petroleum Corp. has staked an east offset in section 220, Block G, W.T. Survey. This will be the third try for production in the area 3½ miles northwest of Seminole, Gaines County. The first test was abandoned after it struck gas and the tools were stuck in the hole. The second test, a southwest offset, Amerada Petroleum Corp. and others made the oil discovery.

Ector Extension

Eppenauer Drilling Co. No. 1 C., T. & P. Land and Trust, NW quarter of section 23, Block 43, Township 1s, T. & P. Survey, in the southern extension area of the Cowden field, Ector County, proves another 640 acres or more to production in that part of the field after flowing 161 bbls. of oil in six hours with 25 feet of the hole yet to be cleaned out. It was previously drilled to 4,245 feet, but was plugged back to 4,212 feet to shut off water and shoot with 470 quarts.

Another potential producer and mile western extension for the same part of the Cowden field, is that of the Alma Oil Co. on the Wight ranch, in the SE cor. section 9, Block 43, Township 1s, T. & P. Survey. It is filling with oil, and making considerable wet gas while drilling ahead at 4,140 feet.

Martin County Test

Martin County, which is one of the northern tier of West Texas counties and which got slight attention and little exploration in the past, is to profit by the discoveries made in southeastern Cochran and northwest Dawson counties. J. L. Greene and R. C. Conklin, both of Midland, have assembled 22,500 acres in the northwestern part of the county, and a test is to be drilled in the SE cor. of League 319, Garza County School Lands on a block of 12,000 acres. The remainder of the acreage assembled is in a second block.

Winkler Wildcat

Dunigan Brothers & Brahaney of Breckenridge, have staked location for a wildcat in southern Winkler County, which will be an important test. It is in the SW quarter of section 49, Block F, G.M.M.B. & A. Survey, about 1½ miles north and

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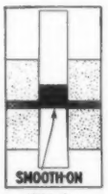

Fig. 1

Picking out weak gasket spots and forcing Smooth-On No. 1 into their place, or if the leak is at a bolt, putting Smooth-On No. 1 under the bolt head and nut and tightening will often make an equally effective seal.

Removing the nearest bolt and forcing Smooth-On No. 3 into the packing space is also excellent procedure. This may be done by closing one side temporarily with a wooden plug (Fig. 1) and forcing the Smooth-On into the other with a hammer and close-fitting rod. Where studs are used in flanges, the stud may be reversed (Fig. 2) instead of using a plug, or the Smooth-On may be filled in through a temporary stud drilled through the center to take a smaller rod, and crosswise with holes leading into the packing space (Fig. 3). A grease gun may be employed to force in the Smooth-On by inserting a threaded pipe, drilled crosswise, capped on one end, locked on the other with a nut, and providing threads for attaching the gun (Fig. 4).

Fig. 2

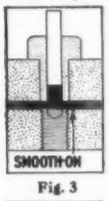

Fig. 3

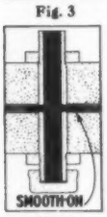

Fig. 4

Adjoining bolts may be treated successively. If the leakage is confined to a small area, drilling a small hole into the flange, forcing in the Smooth-On and closing the hole with a threaded plug may be a time saver.

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a little east of the recent discovery made by Fields, Cherry & Finley on the Sealey Estate in the northern part of Ward County. The location is between two dry holes, one of which is about one-half mile east, which was plugged at 3,210 feet, and the other about a quarter of a mile west, in section 52, abandoned at 3,288 feet. However, when those tests were drilled and abandoned acid treatment of the lime was not used in West Texas.

Northern Ward County is to get a test in the near future in section 82, Block A, east of the O'Brien field, and two other blocks taken in this area by D. C. DeVito of Midland, will probably be drilled later.

Coke County Block and Test

Jack Hagan of San Angelo and associates have leased a block of 8,300 acres in Coke and Nolan counties surrounding the town of Blackwell for the Plymouth Oil Co., which is to drill a 4,000-foot test to be spudded by April 1. It is in an area in which the Mid-Kansas Oil & Gas Co., now Ohio Oil Co., drilled two tests several years ago, one of which showed for a small producer, but failed to make commercial production and was abandoned. A second test in the area also failed to produce.

Loving Field

The Mason Oil Co., which recently opened the second Delaware sand field for Loving County, in section 20, Block 55, Township 1s, T. & P. Survey, has made location for its third test in the area and the second in section 20. Location is 2,310 feet from the north and west lines of the section, and northwest of its discovery well which is standing shut in without pipe line connection. The well averaged 316 bbls. per day at total depth of 3,903 feet when completed.

Jones Wildcats

Dan Whatley of Wichita Falls has moved in rig for a wildcat on the W. B. Brazelton farm, in section 29, O. A. Lands Survey, about 4 miles east of Anson in Jones County. Another new wildcat test for the county is that of S. C. Herring on the E. Haynes farm, in the S. Andrews Survey No. 192, east of the Guitar pool and about a quarter of a mile north of a recent test abandoned by the Brown Eagle Oil Co. and others. It spudded this week.

Sale of Lands

During the week the University Lands Board at Austin accepted bids totaling $406,557.70 bonus and $5,981.77 as first year's advance rentals on oil and gas leases on 74 tracts of land in Upton, Crane and Andrews counties. The Phillips Petroleum Co. and Magnolia Petroleum Co. were the largest purchasers, Skelly Oil Co., Sinclair Prairie Oil Co., Texas Co., and other majors and several independents also made purchases.

Taylor County Wildcat

Finley and Cherry of Midland, have taken over a block of some 2,500 acres centering in the town of Tyke, in Taylor County, and are preparing to drill a 2,500-foot test to be spudded by May 1. The tentative location is 1 mile northwest of the town, on the S. B. Hinds farm, in the Jose Gabo Survey. Ben Rogers of Midland assembled the block.

Ranger District

An interesting test for the Ranger district will be that of J. A. Bearman and others on the R. L. Poe block in the Cisco Townsite, Eastland County. It will explore the Lake horizon and possibly the Marble Falls lime and Ranger sands, if the Lake does not pay off. Contract depth is 3,800 feet and J. S. Stephenson of Strawn is to drill the well. A number of Cisco people contributed acreage while others purchased acreage in the area to help promote the drilling of the test.

An old well just southeast of the town of Cisco has been producing from the Luse sand for 12 years. Production is also found a short distance northeast and also to the north of the town of Cisco.

North Texas

The test of Anderson & Kerr Drilling Co. and Hugh Rapp on the J. R. Singleterry lands, about 2 miles southeast of Collinsville in southwestern Grayson County is appearing as the first deeper oil discovery in the county. The operators are cleaning out the hole which is estimated good for

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from 30 to 50 bbls. per day based on a swabbing test. It was previously drilled to 4,012 feet, but was plugged back trying to shut off water which was not successful. Total depth is now 3,877 feet. The producing formation has not yet been identified, but is believed to be the same as that found in a lone producer several miles to the northwest.

During the week the test was swabbed into pits, swabbing dry in seven hours, the oil testing 28 gravity and showing some salt water. It was given a 15-quart shot after plugging back, which increased the oil in the hole. After it is cleaned out it will be given a pumping test. Another well is preparing to start up about a mile to the northwest of this discovery, which will be an important one.

Wildcats in North Texas

The Green Mountain Corp. is preparing to drill a 3,500-foot test on the E. B. Staggs farm, in Block 34, Angelina County School Lands, 4 miles southeast of Petrolia in Clay County, and 10 miles south of Henrietta, in the same county, L. T. Burns of Wichita Falls has assembled a block of 1,500 acres and staked location for another 3,500-foot test on the L. N. Sparks Survey, about 6 miles southwest of an old line producer on the Worsham ranch and about 3 miles east of another lone producer, on the Myers ranch, in the Thompson Survey.

COMPLETIONS IN WEST TEXAS

Upton County

Texas Pacific Coal & Oil Co. No. 6 Reese, 2,460-2,635 feet, acidized, 704 bbls.; No. 9 Sherk, 2,125-75 feet, acidized, 573 bbls. Powell Gap Oil Co. No. 2 Lane, 2,136-54 feet, 805 bbls., 2 per cent water. D. L. Hunter and others No. 1 Robbins, 2,125-75 feet, acidized, 573 bbls.

Ward County

Standard of Texas No. 7 Adams, 2,900-85 feet, shot, 252 bbls.; No. 44 Durgin, 2,546 feet, 348 bbls.; No. 27 York, 2,378-2,543 feet, shot, 458 bbls. Sinclair Prairie Oil Co. No. 7 Hill, 2,270-2,490 feet, 442 bbls. Gulf Oil Corp. No. 10 Estes, 2,422-2,660 feet, shot, 240 bbls.; No. 66 Hutchins, 2,530-2,755 feet, shot, 1,187 bbls. Tide Water Associated No. 5 Johnson, 2,502-2,623 feet, shot, 2,851 bbls. Richardson Oils, Inc., No. 19 Hathaway, 2,500-2,687 feet, 371 bbls. in three hours.

Winkler County

Illinois Oil Co. No. 7-B Central State Bank of Abilene, 2,855-3,135 feet, shot, 394 bbls.; No. 8-B Central State Bank of Abilene, 2,870-3,125 feet, shot, 350 bbls. Navarro Oil Co. No. 1 Vaden, 2,760-3,130 feet, shot, 507 bbls. Mid-Continent Petroleum Corp. No. 14 Walton, 2,810-2,970 feet, 907 bbls. Emperor Oil Co. No. 2-B Woodley-Halley, 2,690-2,873 feet, 640 bbls. Sun Oil Co. No. 4 Halley, 2,755-2,870 feet, 424 bbls. Atlantic Refining Co. No. 8-B Leck, 3,050-70 feet, 2,357 bbls.; No. 9-B Leck, 3,055-70 feet, 2,184 bbls.; No. 10-B Leck, 3,070 feet, 2,151 bbls. Humble Oil & Refining Co. No. 11-C Walton, 3,058 feet, 316 bbls. in 20½ hours through seven-eighths inch choke: No. 23 Howe, 2,810-3,005 feet, shot, 1,107 bbls. Shell Petroleum Corp. No. 3-L Hendrick, 2,795-3,050 feet, shot, 602 bbls. Sinclair Prairie Oil Co. No. 1-B Vaden, 2,845-3,140 feet, shot, 616 bbls.; No. 2-A Walton, 3,330-3,400 feet, shot, 301 bbls. Richardson Oils, Inc., No. 1 Humble-Walton, 3,175-3,413 feet, shot, 153 bbls. Magnolia Petroleum Co. No. 57 Walton, 2,741-2,990 feet, shot, 110 bbls.; No. 58 Walton, 2,835-2,975 feet, shot, 733 bbls. Gulf Oil Corp. No. 17 Daugherty, 2,809-3,000 feet, shot, 1,033 bbls.

CENTRAL TEXAS COMPLETIONS

Callahan County

Mesa Verde Oil Co. No. 1 Klepper, 3 miles north of Clyde, 1,636-52 feet, total depth 1,793 feet, plugged back to 1,652 feet, 8 bbls. Ungren & Frazier No. 17 Snyder, sand 933-38 feet, 500,000 feet gas.

Coleman County

J. E. Bischoff No. 1 J. E. Wileman, 9 miles southwest of Santa Anna, 815 feet, dry and abandoned.

Jones County

Egger & Snoddy No. 1 Roberts, 4 miles east of Anson, total depth 2,302 feet, dry and abandoned. C. W. and W. L. Snoddy No. 1 Harvey, 3 miles east of Nugent, 1,627-31 feet, total depth 1,633 feet, shot 20 quarts, 13 bbls.

Shackelford County

Baker & Pardue No. 2 Davis B, 1,398-1,401 feet, 67 bbls. R. F. Gilman No. 1 J. C. Smith, total depth 1,025 feet, dry and abandoned. Hanrahan & Lucas No. 3 Casey, total depth 885 feet, dry and abandoned. J. L. Hart and others No. 1 Elliott, total depth 922 feet, dry and abandoned. Humble Oil & Refining Co. No. 1 Morris B, 2 miles east of Morris-Buie pool, total depth 1,887 feet, dry and abandoned. Kendricks & Wooten No. 1 Davis, total depth 725 feet, dry and abandoned. Roeser & Pendleton No. 18 Dawson & Conway, 1,587-1,607 feet, 184 bbls. Schkade Brothers & Wood No. 1 Clausell Estate, total depth 687 feet, dry and abandoned. Sharrock & Elliott No. 2 Elliott, 756-61 feet, 10 bbls.

PANHANDLE COMPLETIONS

Carson County

Gulf Oil Corp. No. 17 Cooper, 2,965-3,098 feet, shot, 711 bbls. on pump. Huber Petroleum Corp. No. 2-M Burnett, 2,527-2,815 feet, 42,095,000 feet gas. Stanolind Oil & Gas Co. No. 4 McConnell, 3,203-90 feet, 301 bbls. on pump.

Gray County

British American Oil Co. No. 11 Phillips, 3,204-3,300 feet, shot, 733 bbls. on pump. Gulf Oil Corp. No. 6-A Faulkner, 2,830-2,936 feet, 673 bbls. on pump. Magnolia Petroleum Co. No. 16 fee, 2,930-3,067 feet, shot, 128 bbls. on pump. Manston Oil Co. No. 3 Sullivan, 3,196-3,358 feet, 316 bbls. on pump.

Hutchinson County

Bonner and others No. 1 Moore, 3,167-78 feet, shot, 313 bbls. on pump. Phillips Petroleum Co. No. 1 Record, 2,255-2,555 feet, shot, 10,566,000 feet gas. Stekoll Oil Producer No. 5 Wisdom, 3,020-3,130 feet, shot, 381 bbls. on pump. Travelers Oil Corp. No. 3 Haile, 3,012-90 feet, shot, 547 bbls. on pump.

Potter County

Canadian River Gas Co. No. 19-A Bivins, 2,320-

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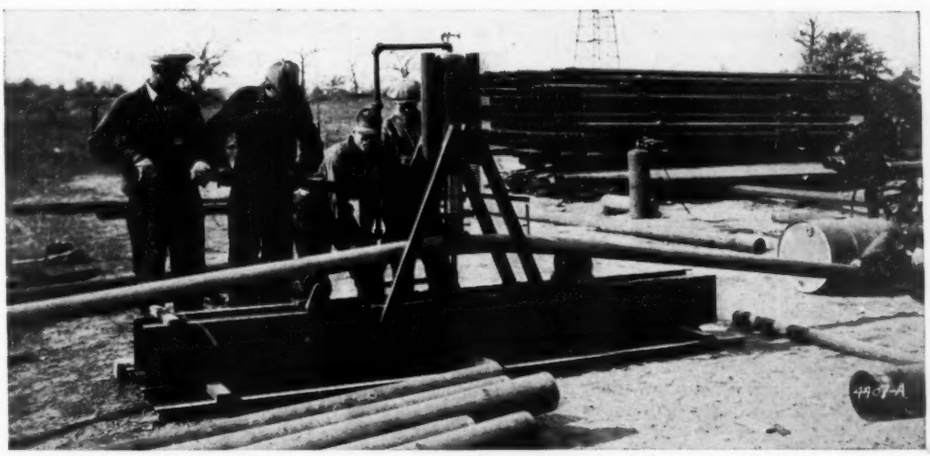

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2,625 feet, plugged back to 2,595 feet, 20,800,000 feet gas.

Moore County

Rubin and others No. 3 Beard, 2,873-3,081 feet, 67,187,000 feet gas.

Wheeler County

Palmer and others No. 4 Nelson, 2,070-2,275 feet, 1,984,000 feet gas.

Gulf Coast Fields

(Continued from Page 64)

8 a. m. February 26, it flowed 45 bbls. of fluid, less three-tenths of one per cent fresh water through a three-sixteenths inch choke with tubing prssure 2,375 pounds and shut in casing pressure 2,050 pounds.

In the same county, but located at the Seabreeze field, Chambers County, Sun Oil Co. No. 1-B White located in the H.T.&B. Survey No. 116, topped the Discorbis at 6,927 feet, Heterostegina at 7,425 feet and the Marginulina at 7,661 feet Sand showing gas was cored from 8,132-37 feet and it is coring ahead below 8,189 feet. This is the third test to be drilled by the company and is located midway between two distillate producers.

Amelia Completion

Humble Oil & Refining Co. No. 2 Peveto, Amelia field, Jefferson County, flowed 576 bbls. per day through a quarter-inch choke with tubing pressure 1,400 pounds and casing pressure 1,325 pounds. Sand was topped at 6,760 feet with the hole bottomed at 6,781 feet. Locations for six wells were made by the company. They are No. 1 V. W. Freeman in lot 27, Block 3.; No. 1 Gist Realty Co. in Unit No. 4; No. 1 Gist Realty, Unit No. 23; No. 2 Industrial Investment Co.; No. 3 Industrial Investment Co., and No. 2 M. L. Lefler, south of No. 1 in the C. Williams Survey.

Republic Production Co. and Houston Oil Co. No. 7 Brooks an outpost test located 3,100 feet east of production of the Silsbee field, Hardin County, is showing for a wet gasser after testing in the Upper Cockfield sand through perforated casing at 6,892-98 feet. A drill stem test made in the lower sand section at 6,939-49 feet, tested 19½ thribbles of salt water and 40 pounds of pressure.

Beatty Bowles & Borsodi's No. 1 Frank Truska, Chocolate Bayou Prospect, Brazoria County has been abandoned after testing salt water on a six-minute drill stem test at 5,550-5,624 feet. The test was made through perforated casing after the hole had been plugged back from a depth of 10,082 feet.

Glenn H. McCarthy No. 1 Foley, north of the town of Palacios, Matagorda County, is coring ahead in shale and sand below 7,983 feet after topping the Frio sand. Detailed information on the well has been withheld by the operators and rumors of an oil sand having been encountered cannot be confirmed. Leasing and royalty trading has been brisk and some acreage was sold for $200 per acre cash and $100 in oil. McCarthy is reported to have blocked all unleased town lots at Palacios in fee.

Sun Oil Co. No. 2 J. E. Broussard, the discovery well of the LaBell field, Jefferson County, which was closed in after showing for a wet gasser several weeks ago, was opened February 19 and flowed dry gas through a one-eighth inch choke and then began to show crude oil. On a six-hour gauge it flowed 7½ bbls. of 49 gravity oil with tubing pressure 2,575 pounds and casing pressure 2,550 pounds.

Preparations are being made in the Magnet field, Wharton County, to test Texas Crusader Oil Co. No. 1 Fee, the discovery well which is bottomed in a sidetracked hole at 5,556 feet with 5-inch casing cemented on bottom. Sand showing oil was cored at 5,549-52 feet, which is approximately the same depth at which it was originally completed.

Magnolia Petroleum Co. No. 1 A. B. Wagner, a south offset to the discovery well of the Telferner Gas field, Victoria County, cored sand showing oil and gas at 2,408-2,420 feet, and on a 5-minute drill stem test at 2,389-2,420 feet, it tested 275 pounds of pressure. While the drill stem was being pulled it attempted to blow out, but was brought under control and is coring ahead in shale below 2,490 feet.

Louisiana-Arkansas Fields

(Continued from Page 77)

doned at 2,802 feet after encountering difficult fishing job and pulling derrick in.

Standard Oil Co.'s deep exploratory test of the Sibley field, formerly proven for gas and distillate production in the Lower Glen Rose, discovered gas and distillate in a sand in the Upper Travis Peak last week, to open new producing area in this territory. The company's No. 1 E. Fudicker, NW section 2-17-9w, topped Travis Peak at 6,881 and cored several thin gas sands below this depth. Drilling continues below 7,040 feet before making complete tests of each zone.

Tide Water Oil Co. No. 1 Pipes, NE SE section 10-18-10, wildcat test of its extensive block, cored salt water sand 6,768-6,780 feet, and hole has been abandoned.

ARKANSAS

Hempstead County

Root Petroleum Co. No. 1 D. F. Jones, NE SW NE section 16-13-23, Hempstead County, Arkansas, Travis Peak test of its large block, has been junked and abandoned at 4,513 feet after finding only unattractive shows of oil.

H. D. Easton and others No. 2 Conway-Tiller, SW SW section 34-12-27, has been plugged and abandoned at 3,246 feet.

Lafayette County

Arkansas makes another bid for production from the Rodessa structure as Carl B. King Drilling Co. prepares for the drilling of No. 1 Eben H. Woolcott, NE section 36-19-26, about 10 miles northeast of present Rodessa production. It is thought probable that another Echelon fault of the Rodessa system may be present and afford a trap for the accumulation of oil. The North Rodessa, Lodi and Jefferson structures indicate the extensive Rodessa fault system which as yet is very much undefined.

Little River County

Joe Strahan No. 1 Dierks, SW SE section 21-12-28, wildcat test west of Ashdown, topped anhydrite at 1,834 feet, and drilling continues in same formation 1,990 feet.

Nevada County

Benedum & Trees No. 5 Grove, NE SW NW section 10-14-20, was an additional completion to the recently discovered Troy field last week, pumping 320 bbls. oil and 50 bbls. salt water daily, total depth 2,138 feet.

EAST TEXAS (Border Counties)

Cass County

Following an extensive leasing campaign during recent months, with Humble Oil & Refining Co. as the leader, a deep test is expected soon in the Douglassville area, Cass County, Texas, a few miles north of the Rodessa field. Other large acreage holders in this area include Gulf, Pure, Magnolia and McAlester Fuel Oil Co.

Panola County

Motex Oil Co. has announced intention to deepen its flank test of the Bethany gas field to the Pettitt sand, after being unsuccessful in getting packer to hold at its No. 1 Furrh, Alstone Survey, where gas and salt water showings were logged at the present depth of 5,306 feet, in basal Glen Rose.

Sabine County

A 5,000-acre block has been assembled by E. L. Harris in the northwest corner of Sabine County, centering in the Mackey, W. Murphy and L. Warren Surveys.

MISSISSIPPI

South Mississippi and southwestern Alabama are now enjoying a rather active leasing and geophysical campaign following discovery of a salt dome in Lamar County by Sun Oil Co. in its No. 1 Scanlan & Semmes, section 28-4n-15w.

On a northeast-southwest trend from this dome, Phillips Petroleum Co. has taken geophysical option on about 250,000 acres from large lumber companies. The acreage forms a strip about 8 miles wide and 30 miles long. Other operators are actively gathering leases in the same territory, while geophysical crews are attempting to detail an extension of the "Conroe trend" across southern Mississippi and Alabama.

East Texas Fields

(Continued from Page 75)

No. 4 Wells, 3,672-73 feet, 40 bbls. in 50 minutes.

L. & M. Oil Co. No. 2 Acuff, 3,535-75 feet, 20 bbls. in 30 minutes. Alex McCutchin No. 2 Elder, 3,581-3,607 feet, 30 bbls. in 30 minutes. Magnolia Petroleum Co. No. 2 Sheppard, 3,586-87 feet, 15 bbls. per hour on pump. Roy Reynolds No. 2-A Elder, 3,542-59 feet, 20 bbls. in 20 minutes. Shell Petroleum Corp. No. 66 Watson, 3,559-3,618 feet, 40 bbls. in 30 minutes.

Sun Oil Co. No. 25 Beall, 3,589-90 feet, 42 bbls. per hour; No. 41 Cole, 3,523-48 feet, 71 bbls. per hour. Tide Water Associated No. 28 Hughey, 3,500-35 feet, 60 bbls. per hour; No. 29 Hughey, 3,495-3,623 feet, 60 bbls. per hour. Winston Oil Co. No. 12 Jones, 3,662-63 feet, 70 bbls. per hour.

Rusk County

E. Constantine, Jr. No. 6 Tucker, 3,646-47 feet, 20 bbls. in 24 hours, 10 per cent water. Gulf Oil Corp. No. 10 Baton, 3,580-3,668 feet, 250 bbls. in 24 hours on pump. J. C. Prine No. 5 Warren, 3,763-64 feet, 10 bbls. per hour. Nathan Supply Co. No. 1 Motley, 3,722-25 feet, 25 bbls. in 24 hours on pump. Royal Petroleum Corp. No. 2 Leath, 3,550 feet, 5 bbls. per week on pump.

Humble Oil & Refining Co. No. 3 Joyner, 3,760-91 feet, 50 bbls. per hour. Kline & Powers No. 4 Lee, 3,644-45 feet, 50 bbls. per hour. E. C. Laster No. 1 Fee, 3,755-3,809 feet, 60 bbls. per hour. The Texas Co. No. 6 Stubblefield, 3,643-46 feet, 35 bbls. per hour. Tide Water Associated No. 3-B Thompson, 3,634-75 feet, 12 bbls. in 20 minutes.

Smith County

H. Hanbury No. 3 Cross, 3,712-13 feet, 20 bbls. per hour. Powell-Iron Drilling Co. No. 1 Denton, 3,740-42 feet, 80 bbls. in 4 hours on pump. Sun Oil Co. No. 1 Patterson, 3,732-33 feet, 20 bbls. per hour on pump. Wheelis Oil Corp. No. 13 Patterson, 3,727-28 feet, 25 bbls. per hour.

Upshur County

Danciger Oil & Refining Co. No. 10 Stinchcomb, 3,834-39 feet, 15 bbls. per hour. Magnolia Petroleum Co. No. 30 Free, 3,718-19 feet, 30 bbls. per hour. B. F. Phillips No. 6 Everett, 3,576-3,601 feet, dry and abandoned. Southland & United East & West Oil Co. No. 30 O'Byrne, 3,714-20 feet, 10 bbls. per hour on air lift; No. 32 O'Byrne, 3,728-29 feet, 30 bbls. per hour. Stidham & Thrasher No. 8 O'Byrne, 3,810-12 feet, 20 bbls. per hour on pump. J. A. Wood No. 4-B Phillips, 3,733-34 feet, dry and abandoned.

Michigan Fields

(Continued from Page 70)

a heavy sand-tamped shot in the Berea, Lentz & Miller No. 1 Clink Estate, previously drilled into the Berea with a flow of more than 3,000,000 feet on the way to test Traverse and Dundee oil sands, was estimated good for at least 700,000 feet daily, and perhaps will make more.

West Michigan and Lentz & Miller, Inc., had developed a flow of 400,000 feet daily and were not yet through cleaning out No. 1 Zayacz and others, C SW section 7, Ravenna Township, which made only 100,000 feet naturally from Berea. The West Michigan No. 1 Wagner and others, C NE section 17, Ravenna Township, was coring the Berea before completion at about 1,200 feet.

Gratiot County

Another gas well was completed by the American Production Co., No. 1 Morris, C NW NE section 8-10n-4w, in the New Haven Township, Gratiot County, field, making about 2,000,000 feet daily. Michigan Stray sands were topped at 968 feet and the well finished at 1,007 feet.

Two dry holes also were completed in Gratiot County last week, the Charles E. Weller No. 1 Bolyard, NW NW SE section 27-9n-3w, Fulton Township, which topped the Dundee at 2,987 feet and struck bottom water at 3,107 feet, and the Herbert Snell No. 1 Smead, SW SW SE section 20-11n-4w, one of two deep tests in Sumner Township.

The other, the Talbot & Hutton No. 1 Sharrar, NW NW NE section 23, was expected to be completed this week in the Dundee.

Rocky Mountain Area

By T. R. INGRAM

IMPORTANT TEST IN FALLON COUNTY, MONTANA, FAILURE

DENVER, Colo., Mar. 1.—The Mountain Fuel Supply Co.'s second well on the Powder Wash structure, northwestern Colorado, its No. 1 Stewart, made 35 bbls. an hour initial and was a completion.

There were no completions or new locations in Wyoming, but the Ohio Oil Co. No. 1 State, Byron dome, an edge well, and same company's No. 7 Putnam, in Lance Creek, are near completions.

The Dakota-Montana Utilities Co.'s deep test near Baker, eastern Montana, was dry and abandoned at 7,360 feet. Better weather caused a resumption of drilling operations in Cut Bank with two new locations.

NEW MEXICO

Six producers were completed in the Monument area, Lea County. One of the largest wells of the year was Oil Well Drilling Co. No. 1 Wood State, C W half NE NW section 16-20-37. It flowed at the rate of 200 bbls. of oil naturally at 3,875 feet, total depth. Top of oil pay was 3,795 feet. Production was through 2½-inch choke on tubing.

Other Monument completions: Gulf Oil Corp. No. 3 Kutter B, C NW NW section 28-19-37, topped pay at 3,850 feet; total depth, 3,979 feet; shot and acidized and flowed 78 bbls. of oil in 13 hours. Amerada Petroleum Corp. No. 1 Love, C NW SE section 32-19-37; pay, 3,796 feet; total depth, 3,895 feet; acidized; flowed 371 bbls. of oil in 5 hours and 45 minutes. Humble Oil & Refining Co. No. 3 Laughlin, C SE SW section 4-20-37; pay, 3,842 feet; total depth, 3,880 feet; flowed 52½ bbls. of oil naturally in one hour. Continental Oil Co. No. 1 Britt B, C NW NW section 18-20-37; pay, 3,825 feet; total depth, 3,875 feet; flowed 60 bbls. of oil naturally in one hour through three-quarters inch choke on tubing. Gulf Oil Corp. No. 2 Graham State F, NE NE SE section 36-19-36; topped pay, 3,836 feet; total depth, 3,908 feet; flowed 58 bbls. of oil naturally in three hours through three-quarters inch choke on tubing.

In the Eunice field, Atlantic Refining Co. No. 2 State M, section 36-20-36, flowed 96 bbls. of oil naturally in one hour from pay topped at 3,737 feet; total depth, 3,850 feet. Production was through 2½-inch choke on tubing. Humble Oil & Refining Co. No. 10 State-Aggies, C NW SW section 31-20-37, topped pay at 3,741 feet; total depth, 3,830 feet; acidized, and flowed 43½ bbls. of oil in one hour. Gulf Oil Corp. No. 4 Janda C, C NE SW section 15-21-36, acidized with 2,000 gallons and flowed 278 bbls. of oil in the first four hours from pay at 3,770 feet; total depth, 3,883 feet.

In the Cooper field, El Paso Natural Gas Co. completed No. 1 Toby, C SE SE section 12-24-36, as a gas well at 3,685 feet, total depth. It produced 24,000,000 feet of gas daily.

Other Lea County completions: Empire Oil & Refining Co. and Repollo Oil Co. No. 1 Brunson, NW NW SE section 4-22-37, Eunice sand area, had pay at 3,628-3,750 feet, total depth; acidized and flowed 134 bbls. of oil in seven hours. Mid-Continent Petroleum Corp. No. 1 Greer, C NE NW section 21-22-36, McDonald area, topped pay at 3,716 feet; total depth, 3,794 feet; acidized with 6,000 gallons and flowed 318 bbls. of oil in 12 hours. El Paso Natural Gas Co. No. 2 Harrison, C NW NW section 29-24-37, topped gas pay at 3,043 feet, was bottomed at 3,650 feet, and produced 14,500,000 feet of gas.

Getty Oil Co. No. 1 Etz, C NE NE section 12-21-32, Lea County wildcat, had 2,000 feet of sulfur water in the hole and was dry and abandoned at 3,517 feet, total depth.

Two wells were completed in Eddy County. Neil H. Wills No. 1 Colglazier Permit, C NW NE section 20-20-30, topped oil pay at 1,442 feet; total depth, 1,443 feet, and swabbed 132 bbls. of oil in 24 hours. It is in the Artesia field.

In the Jackson area, Premire Petroleum Co. No. 1 McIntyre G, NW NW NE section 21-17-30, had pay at 2,550 feet, was bottomed at 3,357 feet, acidized with 2,000 gallons and swabbed and flowed 180 bbls. of oil in 24 hours.

Roosevelt County

The Clovis Corp. No. 1 Smith, C NE SE section 17-2s-30e, in the Claudell district, topped the unconformity or Yates sand at 2,142 feet, 123 feet higher than No. 1 Claudell, 1½ miles to the south. This assures conformable structural position on the lime and Glorietta sand, and in view of the showings in the other well makes production in this wildcat almost a certainty. It is drilling ahead at 2,300 feet.

Monument Area

Skelly Oil Co. No. 2 State F, C SW SE sec. 17-20-37. Drlg. 2,080 ft.
Continental Oil Co. No. 1 Britt B, C NE NW sec. 8-20-37. T.D. 3,893 ft.; testing.
Gulf Oil Corp. No. 2 Kutter A, C NW SE sec. 20-19-37. T.D. 4,002 ft.; swabbing and testing.
Ohio Oil Co. No. 1 Laughlin, sec. 9-20-37. Drlg. 3,877 ft.
Amerada Pet. Corp. No. 2 Anderson, C SE SW sec. 8-20-37. T.D. 3,585 ft.; S.D. for repairs.
Amerada Pet. Corp. No. 2 Phillips, C NE SW sec. 33-19-37. T.D. 3,910 ft.; acidized; swabbing.
Amerada Pet. Corp. No. 2-W State, C SW NE sec. 30-20-37. T.D. 3,888 ft.; acidized; testing.
Gulf Oil Corp. No. 3 Sunshine, C NE SW sec. 30-20-37. T.D. 3,837 ft.; testing.
Gulf Oil Corp. No. 1-B Weir, C NW SE sec. 26-19-36. T.D. 3,995 ft.; testing.
Oil Well Drlg. Co. No. 2 Wood-State, NW sec. 16-20-37. Drlg. 675 ft.
Tide Water Oil Co. No. 2-I State, C NE SW sec. 16-20-37. Drlg. 3,658 ft.
Continental Oil Co. No. 3-A-17 State, C NW SW sec. 17-19-37. Drlg. 3,614 ft.
Anderson-Prichard Oil Co. No. 7 Britt, SE NW SE sec. 7-20-37. Drlg. 2,624 ft.
Anderson-Prichard Oil Co. No. 8 Britt, C SW SE sec. 7-20-37. T.D. 3,806 ft.; setting csg.
Tide Water Oil Co. No. 2 State I, C NE SW sec. 16-20-37. Cellar and pits.
Amerada Pet. Corp. No. 3 Byrd, sec. 3-12-20. Drlg. 2,440 ft.
Amerada Pet. Corp. No. 3 Larson, sec. 32-19-37. T.D. 3,810 ft.; W.O.C.
General Crude Oil Co. No. 1-G State, sec. 16-20-37. Drlg. 3,266 ft.
Gulf Oil Corp. No. 3 Anderson, sec. 8-20-37. T.D. 3,314 ft.; S.D. for repairs.
Magnolia Pet. Co. No. 2 Cary, sec. 21-22-37. Drlg. 2,450 ft.
Shell Pet. Corp. No. 1-M State, sec. 1-21-35. T.D. 3,747 ft.; testing.
Texas Co. No. 2-J State, sec. 24-19-36. Drlg. 3,976 ft.
Amerada Pet. Corp. No. 4 Larsen, sec. 32-19-37. T.D. 3,800 ft.; set 6⅝-in. csg.; W.O.C.
Texas Co. No. 1 Cook, SW NE NE sec. 32-19-37. Drlg. 2,772 ft.
Continental Oil Co. No. 2 Britt B, sec. 18-20-37. Drlg. 3,585 ft.
Continental Oil Co. No. 3 Britt B, sec. 18-20-37. Drlg. 3,241 ft.
Phillips Pet. Co. No. 1 Mexico, NE cor. sec. 18-20-37. T.D. 1,180 ft.; W.O.C.
Continental Oil Co. No. 11 Sanderson A, C SE SE sec. 11-20-36. Rigging up rotary.
Amerada Pet. Corp. No. 4 Byrd, C NE NW sec. 12-20-36. Drlg. 3,132 ft.
Gulf Oil Corp. No. 2 Hatchett, C SW NW sec. 33-19-37. Cellar and pits.
Gulf Oil Corp. No. 3 Whitmire, C SE NW sec. 8-20-37. T.D. 2,331 ft.; set 7⅝-in. csg. at 2,327 ft.; W.O.C.
Gulf Oil Corp. No. 4 Whitmire, C SE NE sec. 8-20-37. T.D. 3,817 ft.; set 5½-in. csg. 3,812 ft.
Skelly Oil Co. No. 2 Van Etten, C SW SW sec. 9-20-37. Drlg. 2,517 ft.
Skelly Oil Co. No. 3 Van Etten, C SE SW sec. 9-20-37. T.D. 1,138 ft.; set 9⅝-in. csg.; W.O.C.
Humble O. & R. Co. No. 1 State F, C NE SW sec. 17-20-37. T.D. 3,755 ft.; W.O.C.
Gulf Oil Corp. No. 3 Graham-State F, C NW SE sec. 36-19-36. Drlg. 285 ft.
Amerada Pet. Corp. No. 6 Andrews, C SW SW sec. 12-20-36. Rig.
Gulf Oil Corp. No. 1 Orcutt C, C SW SE sec. 36-20-36. Drlg. 2,555 ft.
Barnsdall Oil Co. No. 7 Cooper, C NW SW sec. 7-20-37. T.D. 2,402 ft.; setting csg.
Gulf Oil Corp. No. 4 Anderson, C NW NE sec. 17-20-37. T.D. 2,400 ft.; W.O.C.
Ohio Oil Co. No. 3 State-McGrail, C NE SW sec. 26-19-36. Drlg. 160 ft.
Gulf Oil Corp. No. 4-F Graham State, C SW SE sec. 36-19-36. Drlg.
Amerada Pet. Corp. No. 5 Byrd, C SE NW, sec. 12-20-36. Drlg.
Amerada Pet. Corp. No. 1 Laughlin, W½ NW NW sec. 9-20-37. Moving in material.
Gulf Oil Corp. No. 5 Anderson, C SE NW sec. 17-20-37. Cellar and pits.
Phillips Pet. Corp. No. 2 Mexico, C SW NE sec. 18-20-37. Cellar and pits.
Superior Oil Corp. No. 1 State B, C NE SE sec. 13-20-36. Drlg. 170 ft.
Amerada Pet. Corp. No. 4 Lambert, C SE NE sec. 6-20-37. Cellar and pits.
Ohio Oil Co. No. 2 Laughlin, C SE NW sec. 9-20-37. Cellar and pits.
Humble O. & R. Co. No. 4 Laughlin, C SW SE sec. 4-20-37. Set surface csg.

Chaves County

J. & L. Drlg. Co. No. 1 Hurd, C SE NW sec. 14-11-26. S.D. 170 ft.

Eunice Area

Getty Oil Corp. No. 1 State D, C SE NE sec. 32-20-37. T.D. 3,860 ft.; S.D. for orders.
Gulf Oil Corp. No. 2 Sunshine, C SE SW sec. 30-20-37. T.D. 3,840 ft.; to acidize.
Gulf Oil Corp. No. 4 Collins, C NE SW sec. 14-21-36. T.D. 3,880 ft.; swabbing.
Gulf Oil Corp. No. 4 Houston, C NW SE sec. 7-21-36. Drlg. 2,785 ft.
Gulf Oil Corp. No. 4 Leonard, C SW NE sec. 22-21-36. T.D. 3,905 ft.; P.B.
Bert Fields et al No. 1 Turner-State, SW SW NE sec. 32-20-37. T.D. 3,875 ft.; testing.
Continental Oil Co. No. 18-B-4 Meyer, C NW NE sec. 4-21-36. T.D. 3,840 ft.; testing.
Continental Oil Co. No. 4-D-11 State, C NE SW sec. 11-21-36. Drlg. 3,725 ft.
Texas Co. No. 3 Rector, NE NW SE sec. 30-21-36. T.D. 3,810 ft.; W.O.C.
Jim Murray No. 4 State-Wallace, sec. 3-21-36. Cellar.
Shell Pet. Corp. No. 3 State K, C SW NE sec. 36-20-36. Drlg. 3,513 ft.
Gulf Oil Corp. No. 1 Bell-Ramsey B, C SW SW sec. 29-20-37. Drlg. 420 ft.
Gulf Oil Corp. No. 5 Leonard, C NE NE sec. 22-21-36. Drlg. 1,435 ft.
Amerada Pet. Corp. No. 3-W State, C SW NE sec. 30-20-37. Drlg. 1,051 ft.
Amerada Pet. Corp. No. 4-W State, C SE SE sec. 30-20-37. Drlg.
Continental Oil Co. No. 7-D-15 State, C NW SE sec. 15-21-36. Drlg. 2,110 ft.
Gulf Oil Corp. No. 12-C Arnott-Ramsey, C NW SE sec. 21-21-36. Drlg.
Shell Pet. Corp. No. 2-H State, CWL NE NE sec. 13-21-35. Drlg. 1,634 ft.
Humble O. & R. Co. No. 11 State-Aggies, C NE NE sec. 31-20-37. Drlg. 170 ft.
Atlantic Ref. Co. No. 5 State L, C NW NW sec. 3-21-36. Drlg.
Two States et al No. 1 State, C SE NW sec. 11-21-36. Drlg. 2,081 ft.
Gulf Oil Corp. No. 2 White, C NE SE sec. 25-20-36. Drlg.
Texas Co. No. 6 Lilu-Lands, C NW NE sec. 20-20-37. Cellar and pits.
Mid-Continent Pet. Corp. No. 1 Reener, C NW NW sec. 29-20-37. Loc.
Texas Co. No. 5 State-Aggies, SE NE SE sec. 31-20-37. Cellar and pits.
Tide Water Associated Oil Co. No. 1 Marshall, C SW NE sec. 13-21-36. Cellar and pits.
Continental Oil Co. No. 14-B-6 Lockhart, C SW SW sec. 14-21-36. Cellar and pits.
Continental Oil Co. No. 15-D-8 State, C SE SE sec. 15-21-36. Cellar and pits.
Ohio Oil Co. No. 6 McDonald, C SE SW sec. 16-22-36. Cellar.
Oil Well Drlg. Co. No. 1 State A, C NW NW sec. 16-22-36. Rig.

Sims Area

Skelly Oil Co. No. 1 R. R. Simms C, C SE SW sec. 3-23-37. T.D. 3,388 ft.; fsg.
Penrose & Rowan No. 3 Cary, C SE NW sec. 22-22-37. T.D. 1,150 ft.; S.D.O.
W. H. Street et al No. 1 Wood, C W½ SE NE NE sec. 22-22-37. T.D. 3,654 ft.; flowed 150 bbls., 24 hrs.
J. E. Farrell No. 1 Walden C, sec. 15-22-37. T.D. 3,686 ft.; flowed 32 bbls., 18 hrs.
J. E. Farrell No. 1-A Walden, C SW NW sec. 15-22-37. Drlg. 3,551 ft.
Skelly Oil Co. No. 2 R. R. Simms, C NE SW sec. 3-23-37. Drlg. 3,503 ft.
Skelly Oil Co. No. 2 Ella Simms, C SW NE sec. 3-23-37. T.D. 3,405 ft.; set 7-in. csg.
Skelly Oil Co. No. 4 Baker, C SW NW sec. 27-22-37. Drlg. 1,450 ft.

Cooper Area

Southern Oil Corp. No. 1 Gates, C SW NW sec. 23-24-26. T.D. 3,514 ft.; S.D. for orders.
Shell Pet. Corp. No. 1 Guthrie, C SW SE sec. 34-23-36. T.D. 3,928 ft.; P.B. 3,780 ft.; S.D. for orders.
Continental Oil Co. No. 1 Danciger, C NW NE sec. 8-22-36. Cellar and pits.

Lea County—Miscellaneous

Plains Prod. Co. No. 4 Knight, C SW SW sec. 22-24-37. Drlg. 3,018 ft.

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THE EVERSTICK ANCHOR CO. FAIRFIELD, IOWA

Culberson-Irwin & Stovall No. 2 Stuart, NW SE NE sec. 20-25-7. T.D. 3,360 ft.; W.O.C.
Brown & Reynolds No. 1 Parcell, C NW SE sec. 8-21-38. Wildcat; T.D. 4,373 ft.; running csg.
Tide Water Oil Co. No. 1 Coates B, C NW NW sec. 21-25-37. T.D. 3,077 ft.; P.B. 3,032 ft.; W.O.C.
Amon G. Carter No. 2 Elliott, C NE NW sec. 22-22-37. T.D. 3,622 ft.; fishing.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 24-17-34. T.D. 4,902 ft.; testing.
Anderson-Prichard Oil Corp. No. 2 Carlson, C SW NW sec. 21-25-37. T.D. 2,950 ft.; testing.
Culberson-Irwin & Stovall No. 3 Stuart, NE SE SW sec. 10-25-37. Cellar and pits.
Continental Oil Co. No. 1 Wantz, C SW SW sec. 21-21-37. T.D. 3,815 ft.; testing.
Maljamar Oil & Gas Co. No. 8 Baish, C SW NW sec. 21-17-32. Drlg. 2,105 ft.
Mid-Continent Pet. Corp. No. 1 Greer, sec. 21-22-36. T.D. 3,794 ft.; testing.
Ohio Oil Co. No. 5 State-McDonald, sec. 16-22-36. Drlg. 3,906 ft.
Stanolind O. & G. Co. No. 1 Meyers, sec. 22-24-37. T.D. 3,372 ft.; R.U.S.T.
Texas Co. No. 1 Alexander, sec. 5-21-37. Drlg. 3,105 ft.
El Paso Natural Gas Co. No. 1 Harrison, C NW NW sec. 7-25-37. T.D. 3,558 ft.; swabbing and testing.
Sun Oil Co. No. 2 Stewart, C SW NE sec. 15-25-37. Loc.
Tide Water Oil Co. No. 2 Walden, C SW NE sec. 21-22-37. Drlg. 2,250 ft.
Continental Oil Co. No. 1 Skaggs Permit, C NE SE sec. 24-20-37. Wildcat; drlg. 1,990 ft.
Tide Water Associated Oil Co. No. 2 Walden, C SW NE sec. 21-22-37. Drlg. 2,620 ft.
Shell Pet. Corp. No. 2 Black, C SW SE sec. 21-24-37. Drlg. 3,495 ft.
Texas Co. No. 3 Sheppard B, SW NE NE sec. 5-26-37. Drlg. 3,120 ft.; est. 7,000,000 ft. gas.
J. L. Perry No. 1 Elliott, SE cor. sec. 19-21-37. Standardizing.
Samedan Oil Co. No. 3 Hughes, sec. 4-23-37. T.D. 630 ft.; running csg.
Texas Co. No. 2 Black, sec. 21-24-37. Drlg. 600 ft.
Gulf Oil Corp. No. 1 Hardy, C SE SW sec. 20-21-37. Rig.
Mack & Stauffer No. 1 Grizzell, C NW NE sec. 8-22-37. Drlg. 930 ft.
Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-25-37. Cellar and pits.
Herschback et al No. 1 Alston, C SW NE sec. 31-17-37. Wildcat; rigging up rotary.
J. C. Clower No. 2 Turner, SW SW SE sec. 29-21-37. Drlg. 600 ft.
Continental Oil Co. No. 4 McCallister A, C N½ NE SE sec. 24-26-36. Rigging up.
Williams & Cockburn No. 3 Miller, C SW SW sec. 23-17-32. T.D. 3,470 ft.; fishing.
Gulf Oil Corp. No. 1 Mattern B, NE NE SE sec. 30-21-37. Cellar and pits.
Ohio Oil Co. No. 1 Grizzell, C SW SE sec. 5-22-37. Loc.

Eddy County

Etz Bros. No. 3 State, sec. 16-17-30. T.D. 3,252 ft.; S.D. for csg.
McGinley & Harwell No. 7 Mann, SW cor. sec. 4-18-27. Drlg. 2,285 ft.
Clint Murchison et al No. 1 State A, C NE SW sec. 16-17-31. T.D. 3,644 ft.; P.B. to 3,636 ft.; to test.
Flynn, Welch & Yates No. 75 State, C E½ SE SE sec. 10-19-28. T.D. 2,135 ft.; S.D.O.
Flynn, Welch & Yates No. 3 Gissler, SW SE SW sec. 14-17-30. T.D. 3,503 ft.; flowing 75 bbls. daily.
Adams et al No. 1 Page, sec. 15-21-18. Wildcat; machine.
Republic Prod. Co. No. 7 Russell A, NW SE NW sec. 18-17-31. T.D. 2,433 ft.; S.D. for repairs.
Red Lake Oil Co. No. 8 State, SE NW SW sec. 22-17-28. Drlg. 1,758 ft.
Republic Prod. Co. No. 3 Robinson Permit, C NE NE sec. 27-17-29. Drlg. 982 ft.
Barnsdall Oil Co. No. 5 Dodd, sec. 22-17-29. Drlg. 1,115 ft.
Flint Prod. Co. No. 1 Flint, sec. 14-17-30. T.D. 3,459 ft.; flowed 150 bbls., 24 hrs.
William Dooley No. 2 Hatchett, SW SW NE sec. 14-20-26. Location.
Neils Wills et al No. 1 Chase, C NW SW sec. 6-20-30. Wildcat; rigging up machine.
H. C. Wells et al No. 1 State, NW SW NW sec. 19-20-30. Wildcat; location.
H. & W. Drlg. Co. No. 1 Forgarty, C SW SW sec. 14-23-29. Wildcat; location.

Roosevelt County

Clovis Corp. No. 2 Wilmes, C SE NE sec. 17-2s-30e. Drlg. 2,300 ft.
Wirt Franklin and Flynn, Welch & Yates No. 1 Catta, C NW NW sec. 28-3n-30e. T.D. 5,155 ft.; S.D. for repairs.

Hobbs Field

Stanolind O. & G. Co. No. 30-X Capps, SE sec. 3-19-38. T.D. 4,083 ft.; set 7-in. csg. at 4,077 ft.; W.O.C.

Otero County

George Muldey No. 1 State, SW cor. sec. 11-25-8e. Spudded.
O. K. Hearte No. 1 Hattie Evans, NW NW SW sec. 22-24-12. O.W.D.D.; wildcat; drlg. 1,840 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW sec. 19-11n-4e. S.D. 3,000 ft.; contr. depth; prep. to resume under new contr. to go to 5,000 ft.

McKinley County

S. Dysart et al No. 1 Bouton, NW NE sec. 14-14n-10w. T.D. 1,390 ft.; pulled 4¾-in. and S.R. to bottom.

COLORADO

Adams County

Glenridge Oil Corp. No. 1 Hills, SE SE SE sec. 27-3s-64w. Drlg. below 4,267 ft. in sh. and streaks of sdy. L.; carrying 6¼-in. at 4,260 ft.

Huerfano County

S. W. Pressey No. 1 Ojo, SW NE sec. 10-29s-69w. Drlg. 3,310 ft.

Kiowa County

Gulf Oil Corp. No. 1 Riser-Union Pacific, C SW NE sec. 1-17-50w. Drlg. 6,067 ft.

Las Animas County

Garcia Corp. No. 1 McClung NE NW SE sec. 19-33s-61w. S.D. 1,816 ft.; prob. abd.

Moffat County

The Mountain Fuel Supply Co. No. 1 Hal Stewart, C SW SW section 32-12n-97w, on the Powder Wash structure, was completed at the total depth of 3,113 feet in the Wasatch formation of Tertiary age and on a short test produced 35 bbls. per hour. It had 26 feet of sand. Elevation is 6,770 feet. The location is three-quarters of a mile west of its No. 1 Allen, the discovery well, which was completed at 5,032 feet for 47½ bbls. per hour on a six-hour test. The company will proceed with the drilling of its No. 1 Donnell, half a mile north and a little west of No. 1 Stewart, for which location was released last December.

Mountain Fuel Supply Co. No. 1 Donnell, C SE NE sec. 31-12n-97w. M.I.M.
Anderson-Kerr Drlg. Co. et al No. 1 Govt., C SE SE sec. 19-9n-99w. Drlg. 900 ft. in 15½-in. hole in br. sdy. sh.

Morgan County

Swisher et al No. 1 Lunt, SE cor. sec. 3-4n-60w. Resumed; T.D. 1,718 ft.; rng. tbg. with packer to test.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75. Drlg. 3,925 ft.; 10¾-in. on bottom.
South Park Oil Co. No. 1 State, SE NE SW sec. 16-11s-75w. S.D. 5,705 ft.

WYOMING

Albany County

Murphy Oil Co. No. 3 Wilson, SW NW SW sec. 18-17n-76w. Digging cellar; (first report).
Murphy Oil Co. No. 6 Holst, NW NE SE sec. 13-17n-77. Drlg. 3,755 ft.

Big Horn County

The Ohio Oil Co. No. 1 State, on the Byron dome, is a near completion in the Tensleep. It is close to the southern edge and is running approximately 50 feet lower than the Taylor Oil Co. No. 1 Haskins, 800 feet to the north, the nearest producer. Total depth approximately 5,450 feet. It is testing, but getting poor returns. It will be acidized.

The Perkins Oil Well Cementing Co. moved an outfit to the Stock Oil Co. No. 1 Allen this week and was preparing to run 4,000 sacks of cement in what is expected to be the final plugging of the well which has been out of control for more than a year and was on fire several times.

Stock Oil Co. No. 1 Allen, Lot 52 (SE NW SE) sec. 32-56n-97. Prep. to cmt. hole and craters.
Ohio Oil Co. No. 1 Baker-Byron, SE NW sec. 23-56n-97w Drlg. 2,245 ft.
Ohio Oil Co. No. 1 State, NE cor. Lot 38, sec. 36-46n-97. Tstg. 5,450 ft.

Carbon County

Ohio Oil Co.-California Co. No. 2 Kyle, C SE SE sec. 26-21n-79w. Drlg. 1,954 ft.
Ohio Oil Co.-California Co. No. 4 Union Pacific, C SW SW sec. 25-21n-79w. Cmtd. 12½-in. at 494 ft. with 300 sacks.
Ohio Oil Co. No. 1 H.&C., SE SE SW sec. 35-20n-78w. T.D. 3,230 ft.; rng. 4¾-in. lnr. to cmt. and test Sundance.
Ohio Oil Co. No. 7 H.&C., C NW sec. 2-19-78. Drlg. 5,627 ft.; prob. in Embar.
General Pet. Corp. No. 1 Union Pacific, SW NW sec. 19-83w. P.B. from 5,557 ft. and set 8⅝-in. at 2,875 ft.; tstg. S.O. in G.P. sd.

Fremont County

Tropic Oil Co. No. 1 Govt., C SE SW sec. 34-27n-90w. S.D. 3,160 ft.

Goshen County

Ohio Oil Co. No. 1 Red Cloud Cattle Co., NW NE NW sec. 28-20n-62w. Drlg. in r.b. 2,432 ft.

Laramie County

Amerada Pet. Corp. No. 1 Morton, C SW SW sec. 13-13n-68. Drlg. 9,100 ft.; in Sundance.

Lincoln County

Place Oil Co. No. 1 Davis, SE SE SE sec. 9-26n-113w. S.D. 750 ft.

Niobrara County

Continental Oil Co. No. 3-B Schuricht, C SE SE sec. 6-35n-65w. Drlg. sh. 349 ft.; 13¾-in. at 65 ft.
J. M. Huber Corp. No. 1 Midwest, SE SE SW sec. 27-36n-65w. Dismantling old equipment and prep. to install rotary to deepen from 3,540 ft. to Sundance.
Holly Dev. Co. No. 1 Novick, NE SE SW sec. 6-35n-65. T.D. 3,578 ft.; rec. D.P.; prep. to run pipe.
Ohio Oil Co. No. 7 Putnam, NE NE SW sec. 33-36n-65w. T.D. 3,957 ft.; cmtd. 7-in. 3,929 ft.; 250 sacks.
Ohio Oil Co. No. 5 Leo, NW NW SW sec. 35-36n-65w. Drlg. 1,850 ft.; 12½-in. 160 ft.; 100 sacks.

Park County

General Pet. Corp. No. 1 Govt., NW NW NW sec. 33-47-100. T.D. 5,660 ft.; fsg.

Platte County

Dividend O. & R. Co., Inc., No. 1, CSL NW SW sec. 17-24n-66. S.D. 2,385 ft.; C.D.

Weston County

Osage production in January was 18,500 bbls. Deliveries to refineries 19,800 bbls. December production was 19,573 bbls. and refiners took 21,000 bbls. Deliveries to refineries increased sharply when the roads were reopened this month and runs are expected to go about 10,000 bbls. over the average for the past four months.

Charles Stough No. 6, C SE NW sec. 4-46n-63w. Drlg. 180 ft.

MONTANA

Carbon County

Miracle Oil Co. No. 2 Govt., CWL NE SE sec. 3-6s-23e. T.D. 1,260 ft.; landed 8¼-in. at 1,250 ft.; fsg.

Ohio Oil Co. No. 1 N. P., SE NE SW sec. 11-7s-21e. T.D. 5,772 ft.; P.B. to 4,470 ft.; pulled 4½-in.; recmtd. 6⅝-in. at 4,436 ft.; 60 sacks.

Fallon County

The Montana-Dakota Utilities Co. No. 2 Warren No. 1 Unit 5, C SW section 23-8n-59e, on the Baker dome of the Baker-Glendive anticline, was plugged back from 7,360 feet to a gas sand at 2,200 feet. Gas was not commercial and test was plugged and abandoned. The location is about 30 miles north of the discovery well and the test ran about 500 feet lower, indicating that the southeastern end of the fold is most promising for oil production. No test has yet been reported on No. 3 Smith.

Montana-Dakota Utilities Co. No. 3 Smith No. 1, Unit 8, C SE NW sec. 8-4n-62e. T.D. 6,765 ft.; 9⅝-in. cmtd. at 6,750 ft.; W.O.C.

Nagasco Corp., Inc., No. 1, C SE sec. 24-5n-60e. Drlg. 560 ft.; (first report).

Glacier County

The cold weather which caused every operation in the Cut Bank field to suspend, moderated the past week and several wells resumed and two new locations were made.

Wm. Hanlon, Agt. No. 2 All. 131, C Lot 9 (SW NW) sec. 7-32n-5w. R.U.

Glacier Prod. Co. No. 1 Abraham, C SW SE sec. 19-34n-5w. R.U.

Glacier Prod. Co. No. 5 Seeba, CWL NW NW sec. 2-34n-6w. R.U.

Glacier Prod. Co. No. 1 Williams, C SW SE sec. 21-33n-5w. Drlg. 1,175 ft.

Dr. Peter Potter No. 2 All.-125, NW NE NE sec. 12-32n-6w. Loc.; (first report).

R. C. Tarrant No. 1 Kirst, C NW SW sec. 18-34n-5w. Spdg. 50 ft.; (first report).

Petroleum County

O. B. Canfield No. 1 Govt., CEL SE NE sec. 21-17n-24e. (black Butte); drlg. 750 ft.

Park County

Ben W. Ryan et al No. 1 Burgess, SE SW NW sec. 28-2s-11e. S.D. 610 ft.

Phillips County

R. G. Parrent No. 1 Hartman, C NW SE sec. 12-24n-25e. S.D. 862 ft.

City of Malta No. 1, C SE SE sec. 18-30n-30e. T.D. 1,120 ft.; rebldg. rig burned down.

Toole County

All drilling wells in the Kevin-Sunburst field continued shut down on account of the weather.

NEBRASKA

Lincoln County

Smith & Wright No. 1 Hansen, C SW NW sec. 24-15n-31w. Res. at 800 ft. in gr. L. after recovering bit.

UTAH

Grand County

Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. T.D. 6,363 ft. in upper Hermosa; prep. to resume March 1.

Columbia Crude Corp. No. 1 Rath, NW SW SW sec. 12-35-20e. T.D. 2,138 ft.; hd. fine, light sd. 2,085-2,134 ft.; porous sat. sd. 2,135-38 ft.; trying to S.O. 1,700 ft.; wtr. at 2,033 ft.

Eastern Fields

(Continued from Page 66)

on Aarons Fork in Elk district. Here the elevation is 881.2 feet.

In Poca district, this company completed the test on the L. E. Campbell farm 7 feet deeper than reported last week or 4,852 feet. The gauge increased to 6,883,000 feet a day. Twenty-two wells are drilling in the two Oriskany fields, several of which are reaching the sand.

Outside Deep Tests

The deep test of Godfrey L. Cabot, Inc., on the Allen Hardman farm in Center district, Calhoun County, is shut down at 5,936 feet. There was a show of gas in the shale which gauged 65,000 feet a day. The hole started to cave and it is being cemented. This deep test is located about 3 miles west of Grantsville on the Archers Fork anticline and just west of Bee Creek. It is on the west flank of the anticline, the axis of which passes through Grantsville.

This same operator shut down the deep test on the T. F. Smith farm on the west flank of the Chestnut Ridge anticline in Geary district, Roane County, after passing through the Oriskany sand which was void of gas and having salt water. The

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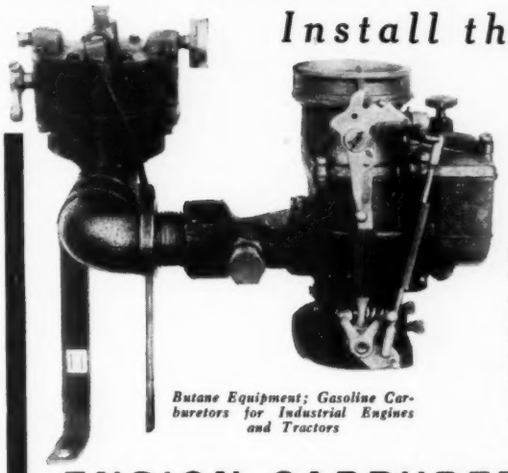

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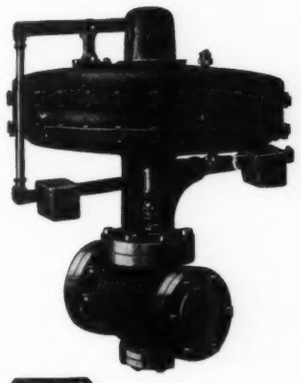

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bottom of the sand was at 6,039 feet and the final depth 6,057 feet.

In Hancock County, John T. Galey has reached 550 feet in a deep test on the Rachel T. Talbot farm in Grant district and has run the first string of casing. Other deep tests in Wirt County are shut down.

New Work

In Boone County, the Owens Illinois Glass Co. has a location for No. 20 on the Allen & Pryor lease in Scott district. In Calhoun County, Brannon, Bartlett & Ryan have a location for a test on the Bert Wears farm in Washington district. In Sherman district, the Hope Natural Gas Co. has a location for No. 3 on the McIntyre-Rafferty farm.

In Jackson County, Boggess & Starcher have a location for a test on the E. S. Halbert farm in Washington district. The elevation is 703.53 feet, and it is located on the waters of Elk Fork.

In Marshall County, the Manufacturers Light & Heat Co. has a permit for a test on the D. L. McGinnis farm in Cameron district. In Liberty district, the Valley Run Oil & Gas Co. is down 2,175 feet on the C. Yoho farm and the Greenfield Oil & Gas Co. 2,260 feet on the H. B. Mason farm. G. B. and A. C. Patterson have reached 1,400 feet in No. 2 on the W. B. Patterson No. 2 tract. In Union district, M. Haslett and others have a rig standing for a test on the C. Haslett farm.

In Wirt County, L. B. Carroll and others have a location for a test on the F. D. Perree farm in Burnings Springs district. In Clay district, C. T. Fieck and others started drilling the test on the Thomas Males heirs farm.

Southwest Texas Fields

(Continued from Page 62)

portant of the year, so far, and may continue to stand out as such throughout 1937. It is the first deep production in the Laredo district, coming from the Conroe sand in the Cockfield. It is expected that considerable deep exploration will result from this strike in the next few months.

Fault Line Area

The Fault Line area has two active spots, Caldwell and Guadalupe counties, where considerable drilling is progressing in the Darst Creek and Branyon-Webster areas, and the Pearsall field of Frio County, where Amerada Petroleum Corp. completed No. 7 Halff & Oppenheimer for a good producer in the Austin Chalk. The test was deepened from the Navarro, where it was originally completed, later going dead.

In Jim Wells County, two fields were attracting considerable attention. The new West Premont producing area gained a new producer in sand at 2,254-65 feet when Tom Graham brought in No. 2-A Bennett for 103 bbls. per day. The regular pay sand of the field is found at 2,350 feet. Several rigs are now active in the field.

The Sandia field was brought into first oil production when O. W. Killam No. 8 Wade made an initial production of 60 bbls. per day from sand at 4,018-23 feet.

Karnes County, generally inactive, drew some attention, as L. Glasscock No. 1 Conway blew out at 3,308 feet, making an estimated 10,000,000 feet of gas and then was killed. The test may mark a southwest extension to the Burnell gas field in the county.

Oklahoma Fields

(Continued from Page 74)

nolia Petroleum Co. No. 10 Ross Wagner, SE NE SE section 2-14-3, was a location.

Carter County

The only completion in Carter County was Sinclair Prairie Oil Co. No. 17 Mullen, CNL NE SE section 4-4s-3w, Healdton field. It topped sand series at 850 feet and was bottomed at 1,058 feet. After shooting, it pumped 10 bbls. of oil daily.

First reports of new work in Carter County: Samedan Oil Co. No. 11 Pierce A, NE NE SW section 7-2s-2w, cemented surface pipe at 48 feet, and waiting: Helmerich & Payne No. 1 Wolverton, SE NE NW section 21-3s-1w, wildcat, location for a 5,000-foot test; Wolverine Oil Co. No. 89 Dillard, NE SW SW NE section 22-4s-2w, an old well, cleaning out to deepen; Texas Co. No. 14 Watson, NW SE section 10-4s-3w, machine.

Marshall County

Levelle Coal Co. No. 3 Cox, SW SE NE section 26-7s-5e, Marshall County, was drilling with machine at 360 feet.

Jackson County

Burk Royalty Co. No. 5 Minor, SW NE NE section 15-1n-20w, Altus pool, Jackson County, topped Granite Wash at 1,315 feet; total depth, 1,325 feet; swabbed 88 bbls. of oil in nine hours and was completed as a 75-bbl. pumper.

Stephens County

Raizen Brothers No. 1-B Price B, SE NW SE section 10-3s-5w, Loco pool, Stephens County, had sand at 1,450 feet; total depth, 1,471 feet, and was completed as a 10-bbl. pumper. Same operator's No. 1-A Price B, SE NW SW section 10-3s-5w, was an abandoned location.

Raizen Brothers No. 2 Price B, NE SE NW SW section 10-3s-5w, was drilling in shale at 756 feet. B. F. Lundy No. 1 Calmes, NW SW SE section 35-1n-4w, wildcat, was rigging up rotary tools.

Kiowa County

Rush C. Roberts No. 1 Funkhouser, SE NW NW section 25-7-17w, Kiowa County, was abandoned at 865 feet, total depth. Principle Oil Co., Inc., No. 1 King, SW NW SW section 27-7-20w, an old gas well, will not be deepened at this time, as previously announced.

Jefferson County

Bridwell Oil Co. No. 5 Barnett, NE SW NE section 30-6s-5w, Jefferson County, had sand at 1,528 feet; total depth, 1,536 feet; and was completed as a 25-bbl. pumper.

Two new wildcat tests in Jefferson County were reported. Heenan & Coe and others No. 1 Rose, C SW SW section 1-5s-5w, wildcat southwest of Ringling, had dug pits. It was to be an Arbuckle lime test. Dodson, Wells & Pierson No. 1 Key, SE SE NW section 6-8s-6w, west of Fleetwood, in the extreme southern part of the county, had dug pits and had tools on location.

Cotton County

Phillips Petroleum Co. No. 1 Moore, SW SW NE section 6-5s-12w, Cotton County wildcat, topped Canyon series at 2,131 feet; white lime, 2,157 feet, and was abandoned at 2,183 feet, total depth.

Grady County

Western White Lily Oil Co. No. 1 Stover, SE SW NW section 33-3n-7w, had derrick timbers on the ground for a wildcat in Grady County, north of Marlow in Stephens County. It was to be a 3,500-foot test.

Kansas Fields

(Continued from Page 69)

with 3,000 gallons, pumped 120 bbls. of oil in 24 hours and was completed.

Two wildcats were started in Woodson County. Harper and others No. 1 Weidie, SE SE NE section 10-24-14, had spudded. C. L. Sheedy No. 2 Fulhage, C S half NW SE section 27-25-14, was rigging up machine.

Scott County

C. R. Blackman and others No. 1 Nolan, NW NW NE sectioon 13-19-33w, wildcat in Scott County, was an abandoned location.

Scattered New Work

In Ellsworth County, Gulf Oil Corp. No. 2 Grizzell, NW SW NW section 31-17-10w, was a location.

In Stafford County, Rose Spring Drilling Co. and others No. 1 Gray, NW cor. section 11-24-13w, wildcat, was moving in material.

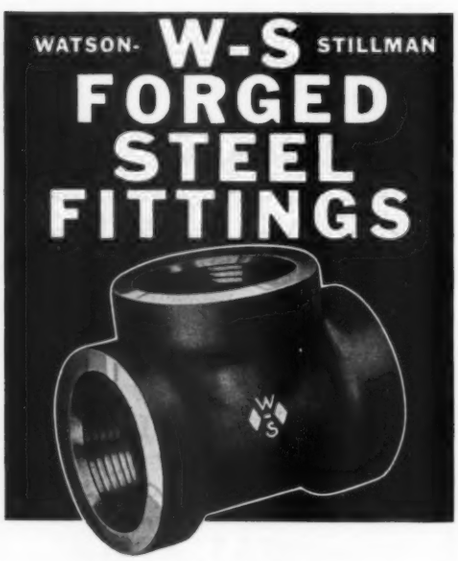
In Butler County, C. L. Seibel and others No. 1 Bisagno, SE SE NW section 24-25-6, wildcat, was a location; Phillips Petroleum Co. and others No. 2 Moore, SE SW SE section 1-25-3e, was moving in machine.

In Cowley County, Tom Palmer No. 1-A Lowe, SW SE SE section 3-32-5e, wildcat, was a location.

In Sumner County, Sinclair Prairie Oil Co. No. 2 Herrick, NE SW NE section 15-35-2e, in an old shallow gas area, was a rig.

In Harper County, Carter Oil Co. was moving in material at No. 1 Seibert estate, C SW NW section 4-34-8w, a wildcat.

Coburn (Cy) Herndon, vice president of the Herndon Drilling Co., Tulsa, snapped at Chase, Rice County, Kansas



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California Field Report

By L. P. STOCKMAN

NO INCREASE IN PRODUCTION WILL BE REQUIRED THIS YEAR

LOS ANGELES, Calif., Mar. 1.—A recent survey indicates that California marketers and refiners will require approximately the same amount of crude oil during 1937 as was produced in 1936. Gasoline consumption is expected to show an increase of approximately 8 per cent, but additional cracking later in the year will take care of that and at the same time permit the maintenance of offshore shipments at a normal rate. A number of cargoes of crude oil have been shipped from Bahrein Island in the Persian Gulf to Japanese ports during the current year to date and, while this movement is expected to continue during the remainder of the year, it is believed quite probable that the present shipments of crude oil will be reduced and shipments of refinery residuum increased. Marketing of Bahrein Island crude in Japan has restricted the movement of California crude to Japenese ports, but this has not yet become a factor of great importance.

Refiners in Japan specify Kettleman Hills crude in preference to all other available grades due to its high gasoline content and paraffin base. In view of the above, it is unlikely that any change will be made in the state's allowable daily production of crude oil during March, April and May. A substantial increase may be anticipated during the summer but, because of continued excess production above the established allowable, the projected increase may not be as large as would ordinarily be made.

The effect of development work in new fields and other districts in the ascendancy on state production during 1937 is problematical. Production of the Greeley field, discovered by Standard Oil Co., and the Ten Section field, discovered by Shell Oil Co., will be restricted to consumptive demand. Neither of these fields, however, will be permitted to disrupt or jeopardize the present proration program. The Wilmington field of Los Angeles Basin, discovered by General Petroleum Corp., and the Santa Maria Valley field of Santa Barbara County, discovered by the Union Oil Co., should prove more difficult to regulate because of numerous diversified interests and consequently may become important factors in state production of crude oil.

Practically all wells completed in the Santa Maria Valley field have registered large potentials and as a result it will be necessary to severely restrict future production. Wells in this field are liberally spaced and have sufficient oil sand and productive formation to sustain large production. The field is only partially developed and there are more than 100 undrilled locations. The Santa Maria Valley field has produced only a limited amount of crude oil since discovery, due to the lack of pipe line facilities. Union Oil Co. has started construction of a 10-inch pipe line extending from Santa Maria Valley field to tidewater at Avila to provide an outlet for current production. This line, for which $220,000 has been budgeted, will be 30 miles long and require two pump stations to heat and move the oil from Santa Maria to tidewater. The pump station and necessary tankage at Santa Maria will be located on 20 acres recently purchased from the Battles interests. The line is scheduled to be put into operation within the next 90 days.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	February 18		February 11			
Intercoastal-domestic:	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Diesel and gas oil	.....	.....	105,918	15,131	176,726	.....
Gasoline	115,840	16,549	.....	.....	194,946	637,915
Kerosene	.....	.....	.....	.....	.....	385,956
Foreign exports:						
Crude oil	161,870	23,124	91,752	13,107	914,717	905,500
Fuel oil	367,235	52,462	150,640	21,520	1,868,863	1,472,541
Diesel and gas oil	52,374	7,482	95,058	13,580	1,074,736	395,223
Gasoline	.....	.....	87,990	12,570	596,229	912,653
Kerosene	110,468	15,781	57,268	8,181	569,785	54,507
Coastwise-domestic:						
Crude oil	136,162	19,452	144,130	20,590	929,651	736,658
Fuel oil	192,241	27,463	483,471	69,067	1,853,908	1,252,213
Diesel and gas oil	176,021	25,146	13,148	1,878	251,880	255,624
Gasoline	156,629	22,376	342,078	48,868	1,590,625	1,789,888
Kerosene	5,801	829	5,835	834	13,835	55,389

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	75,895	.....
Foreign exports:						
Crude oil	.....	.....	143,889	20,556	388,489	192,079
Fuel oil	.....	.....	60,147	8,592	188,107	252,897
Diesel and gas oil	.....	.....	.....	.....	322,233	.....
Gasoline	.....	.....	251,594	35,942	765,563	588,007
Kerosene	.....	.....	49,135	7,019	115,972	34,927
Lubricants	.....	.....	80,927	11,561	106,280	30,640
Coastwise-domestic:						
Fuel oil	92,595	13,228	389,557	55,651	905,754	1,012,594
Diesel and gas oil	.....	.....	.....	.....	58,124	76,898
Gasoline	106,448	15,207	112,028	16,004	643,684	629,170
Kerosene	.....	.....	.....	.....	3,367	15,699

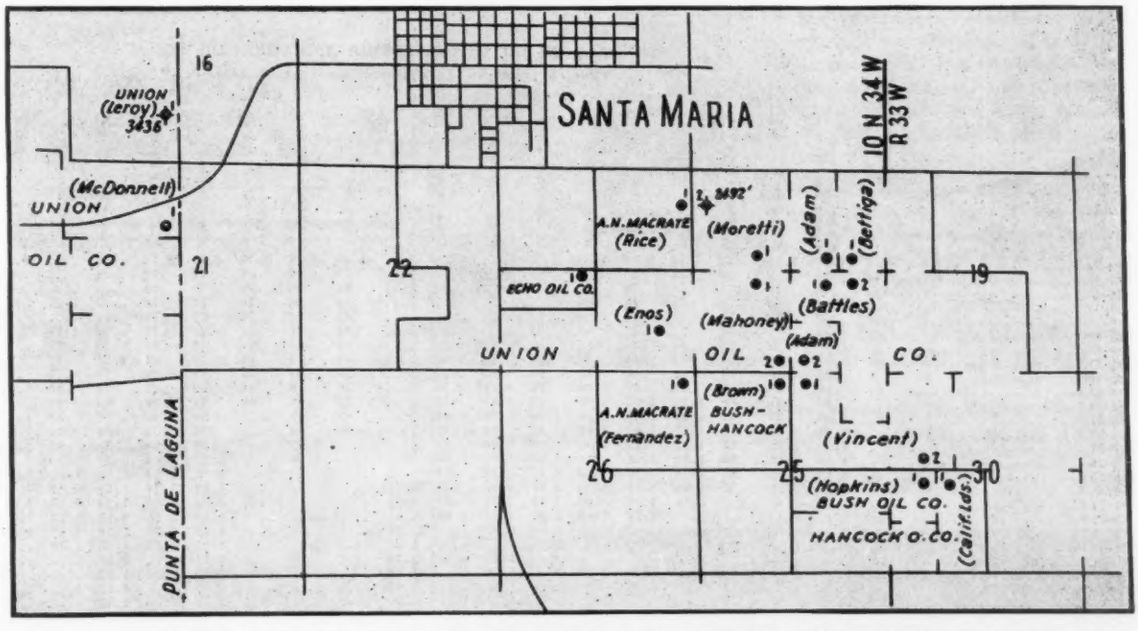
El Segundo

The El Segundo field of Los Angeles Basin, despite the completion of a 2,500-bbl. well by Richfield Oil Co. a few months ago, has taken on a rather dubious outlook and unless something unforeseen develops will not become of primary importance. The northern limits of production appear to be defined by four relatively small wells of Republic Petroleum and Ohio Oil Co. The Texas Co.'s two outposts, No. 2-1 Johnson in the east and No. 1 Security in the west, are running substantially lower structurally than the Richfield Oil Co.'s large flowing well. In the south, the Union Oil Co. No. 1 Security looks extremely dubious as nodular shale has not been found down to 7,459 feet. These three outposts may be completed as commercial producers notwithstanding that correlation work is practically impossible and that production contours seem to close inside of all three locations.

Richfield Oil Co. completed No. 2 El Segundo in the El Segundo field but it has not yet cleaned up entirely. The well came in flowing naturally and is flowing steadily at the rate of 1,000 bbls. of oil and 1,000,000 feet of gas per day. It is estimated that it should build up to about 1,500 bbls. daily after it has cleaned itself out. Ohio Oil Co. No. 2 Gough in this field was finished a few days ago, flowing 294 bbls. of clean 28.1 gravity oil and 800,000 feet of gas per day from 7,341 feet. Top of the Conglomerate was logged at 7,274 feet and the hole bottomed in Schist topped at 7,325 feet. Richfield Oil Co., which recently negotiated a lease for the Santa Fe Railroad's El Segundo station, is moving the depot and is building road to the site of the first test on this 12-acre parcel.

Wilmington

The Wilmington field of Los Angeles Basin is expected to become an important factor in state production



Union Oil Co. has started a new wildcat in section 21-10n-34w, 2 miles southwest of Santa Maria and about 3 miles west of the center of the Santa Maria valley field which that company discovered

within the next six months although it may be late in the year before production of the field reaches the point where it might cause uneasiness. This field is generally given an ultimate recovery of 25,000,000 bbls. of crude oil but it may greatly exceed that figure as the productive formation is rather thick and well saturated. Three productive zones have been penetrated by General Petroleum Corp., discoverer of the field, although most operators are shooting for the second horizon, which has been found the most prolific. No wells were completed during the week but three potential producers are expected to be ready for production tests within 10 days and the number may be increased as there are several wells very close to the top of the pay. Drilling operations indicate the probability that the field will be somewhat larger in area than expected, although General Petroleum Corp., Union Pacific Railroad and a few other operators appear to hold the cream of the acreage. Subsurface formations are conducive to fast footage and production is found at relatively shallow depths ranging around 3,500 feet.

Midway-Sunset

Four new wells were completed in the Midway-Sunset field of Kern County but only one, Standard Oil Co. No. 53-33-D in section 33-32-24, showed large production. It was brought in pumping 698 bbls. of 22.3 gravity oil and 4 bbls. of water per day from 3,080 feet. The hole was finished with an 8⅝-inch water string cemented at 2,882 feet and 234 feet of 7-inch liner carrying 191 feet of perforated. Shell Oil Co. completed a commercial producer in this field when No. 1 McKeon fee was brought in pumping 330 bbls. of 22.5 gravity oil per day from 2,112 feet after the hole had been finished with an 8⅝-inch water string landed and cemented at 1,699 feet. Merritt-Annex Oil Co. No. 3 Fried in section 25-12-24 tanked 360 bbls. of clean 23.3 gravity oil during the initial 24-hour production test and the well has settled to 302 bbls. per day on the beam. No. 3 Fried, which was bottomed at 2,893 feet was finished with an 8⅝-inch water string. The company has moved the rotary drilling equipment from this well to No. 4 Fried and preparations are under way to make an early spud. The Five Points Oil Co. No. 2-4 in section 18-11-23 proved somewhat of a disappointment upon completion at 987 feet as it was good for only 52 bbls. of heavy oil per day.

Kern River

In the Premier section of the Kern River field Golden Bear Oil Co. completed No. 5 Grimes in section 32-27-27, pumping 261 bbls. of 14.9 gravity oil daily from 2,678 feet. The hole was finished with an 8⅝-inch water string landed at 2,540 feet and 160 feet of 6⅝-inch liner, including 135 feet of perforated. Out on the west front of the Kern River field, Standard Oil Co. completed No. 3 Ward fee in section 24-38-27, pumping 219 bbls. of 14.2 gravity oil and 11 bbls. of water per day, at 1,995 feet, with a 10¾-inch water string landed at 1,695 feet, 341 feet of 9-inch liner carrying 302 feet of perforated. California Star Oil Co. No. 7-80 in section 22-28-27 was completed, pumping 110 bbls. of 14.5 gravity oil per day from 2,654 feet. This well, in the west front section of the Kern River field, was finished with an 8⅝-inch liner carrying perforations at 2,261-2,302 feet, 2,343-2,402 feet and at 2,422-2,550 feet. In the old section of the field Thomas McManus has finished his No. 2 in section 2-29-28 pumping 3 bbls. of 12.8 gravity oil daily from 410 feet. The production of this well was a little below expectations although the older section of the field is rather well depleted.

Important Wells

Continental Oil Co. is working on an important wildcat in the Wasco district of Kern County but it remains to be seen whether a conclusive test can be conducted at the present depth. The company had about given up hope of getting commercial production in this wildcat as a test higher up in the hole proved unsuccessful. Continental's Wasco wildcat is bottomed at 9,545 feet and the company is testing. Unfortunately the drill pipe froze at 9,303 feet, and being unable to loosen it the crew cemented this string at that point. A small improvised bailer was rigged up and the crew is attempting to make a conclusive test in this way.

Union Oil Co. staked location for a new wildcat in section 34-28-25, about 3 miles northwest of the Greeley field of Kern County and present plans call for immediate drilling. Shell Oil Co., out in this part of the state, will drill a wildcat in section 14-30-25. This location is about 4 miles northwest of the Shell's discovery well in the Ten Section field. Superior Oil Co. is rigging up heavier drilling equipment in its outpost northeast of the discovery well in the Ten Section field before resuming work. Superior's well, located in section 11-30-26, is bottomed at 10,409 feet and has a string of 7-inch landed and cemented at 10,380 feet. This is the deepest test drilled in this immediate area up to the present time and consequently future work will be watched with interest. This well is a joint test of Superior Oil Co. and Union Oil Co.

Santa Maria

N. A. Macrate, one of the pioneers in the Santa Maria Valley field, has completed No. 1 Fernandez in section 26-10-34, flowing 706 bbls. of relatively clean 16.1 gravity oil daily from 3,900 feet after the hole had been plugged back from 3,975 feet. Union Oil Co. No. 2 Adam should be the next completion listed in the Santa Maria Valley field and this well should be followed into production by No. 1 Hopkins a joint test of the R. R. Bush Oil Co. and Hancock Oil Co. in section 30-10-33. Union Oil Co. is proceeding with its development work in the older section of the Santa Maria field and has three strings of tools in operation on the Squires property in section 26-9-34. In addition to this work and drilling operations in the Santa Maria field, Union Oil Co. is making preparations to drill a new wildcat on the O'Donnell property southwest of the town of Santa Maria and west of present production in the Santa Maria Valley field.

Rosecrans-Dominguez

In the Rosecrans field of Los Angeles Basin, Barnsdall Oil Co. is rotating ahead in No. 10 O'Dea a deep test at 7,650 feet in shale and oil sand. This test is well located with respect to structure and should prove a conclusive test if carried down deep enough. All data available as a result of deep drilling around the edge of the structure indicate that Barnsdall should be successful in discovering a new deep productive zone on top of the structure. Such a discovery is expected to precipitate an extensive deepening campaign as a number of operators are waiting to determine the outcome of Barnsdall's well. In the Dominguez field where Shell and Union Oil Co. are drilling a series of new wells, the former has recompleted No. 2 Manuel pumping 211 bbls. of relatively clean 29.8 gravity oil daily from 4,300 feet. This well was cleaned out and redrilled from 2,600 to 3,800 feet.

San Joaquin Basin

In the Edison field of Kern County, Buffalo Oil Co. completed No. 2 Mansfield in section 24-30-29, good for 50 bbls. of 16.7 gravity oil per day on the beam. The well was bottomed at 816 feet and has a 10¾-inch water string cemented at 785 feet. Drilling operations in the Edison field have been reduced to a minimum and it is doubtful if any further work will be undertaken in the next few months due to high lifting costs and small production.

In the Fruitvale field, Meridian Oil Co. has completed No. 2 Turner pumping 198 bbls. of relatively clean 24.8 gravity oil per day from 3,132 feet.

Over in the Mountain View field Standard Oil Co. completed No. 4 Mabry in section 18-30-29, flowing 159 bbls. of clean 28.1 gravity oil per day from 4,955 feet. Mohawk Oil Co. has given up the attempt to develop a new deep zone in No. 3 Hood, which was carried down to 8,699 feet as the hole has been plugged back to 6,015 feet and a string of 6⅝-inch cemented at 5,932 feet. One small producer was completed in the Kettleman North dome during the past week and it was subsequently shut in immediately subsequent to completion. This was the Kettleman North Dome Association No. 21-30-J, in section 30-21-17, which was finished flowing

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Ventura*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	....	....	....	$.80	$.76	$.76	$.77	$.78	....	....	$.70	$.70	$.70	....	....	$.70	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	....	.82	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	....	.85	.76	.78	.77	.78	....	$.70	.74	.74	.71	$.70	....	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	....	.88	.78	.92	.77	.80	....	.70	.78	.78	.72	.70	....	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	....	.91	.80	.86	.77	.84	$.78	.73	.82	.82	.74	.70	....	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	....	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	....	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	....	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	....	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	....	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	....	.87	.89
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	....	1.02	.95	....	.89	.99	.86	.88	1.01	.98	.90	.83	....	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	....	1.05	.98	....	.92	1.03	.90	.91	1.06	1.02	....	....	....	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	....	1.02	....	.96	1.06	.95	.95	1.10	1.06	....	....	....	.95	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	....	1.06	....	.99	1.10	.99	.99	1.15	1.10	....	....	....	.97	....
29-29.9	1.17	1.16	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	....	....	1.09	....	1.03	1.14	1.03	1.02	1.20	1.14	....	....	....	.99	....
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	....	....	....	1.07	1.17	1.08	1.06	1.25	1.18	....	....	....	1.01	....
31-31.9	....	....	....	....	1.24	Pipe	1.24	1.22	.97	Ship	....	....	....	1.11	1.21	1.12	1.09	1.29	....	....	....	....	....	....
32-32.9	....	....	....	....	1.27	Line	1.27	1.27	1.00	....	....	....	....	1.14	1.25	1.16	1.13	1.34	....	....	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.32	....	$1.28	....	....	....	1.18	1.28	1.20	1.17	1.38	....	....	....	$1.19	....	....
34-34.9	....	....	....	....	....	....	....	1.37	....	1.32	....	....	....	1.22	1.32	1.25	1.20	....	....	....	....	1.23	....	....
35-35.9	....	....	....	....	....	....	....	1.42	....	1.35	....	....	....	1.25	....	1.29	....	....	....	....	....	1.27	....	....
36-36.9	....	....	....	....	....	....	....	1.46	....	1.39	....	....	....	1.29	....	1.33	....	....	....	....	....	1.31	....	....
37-37.9	....	....	....	....	....	....	....	1.51	....	1.43	....	....	....	1.32	....	1.37	....	....	....	....	....	1.35	....	....
38-38.9	....	....	....	....	....	....	....	1.56	....	....	....	....	....	1.36	....	1.42	....	....	....	....	....	1.39	....	....
39-39.9	....	....	....	....	....	....	....	1.61	....	....	....	....	....	1.40	....	....	....	....	....	....	....	1.43	....	....
40-40.9	....	....	....	....	....	....	....	1.66	....	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over.

180 bbls. per day from 8,725 feet after the hole had been plugged back from 8,849 feet. It is significant to note that the last completion on this property, the association's No. 52-30-J, was completed flowing 3,800 bbls. per day less than a month ago.

Los Angeles Basin

In the Richfield district of Los Angeles Basin, Bachman Petroleum Co. completed No. 1 Kelly, bottomed at 3,810 feet and finished with an 8⅝-inch water string landed at 3,585 feet and a 6⅝-inch liner carrying 222 feet of perforated. It pumps 55 bbls. of 23.1 gravity oil per day. In the Huntington Beach field, the Petroleum Co. finished No. 1 Wilson, after redrilling from 2,600 feet to 3,871 feet, and returned it to production pumping 81 bbls. of 23.5 gravity oil per day. This reconditioned well was originally completed at 3,941 feet and remains at this point as the hole was only redrilled to 3,871 feet and the bottom left open. Wilshire Oil Co., which has been doing some general reconditioning and redrilling work at Huntington Beach, has recompleted No. 17 H. B. and this well was returned to production pumping 367 bbls. of 24.1 gravity oil per day from 4,150 feet. This well was originally bottomed beneath the Huntington Beach tidelands but in the redrilling job the hole was plugged back and is now bottomed inside the tideland. In the Santa Fe Springs field of Los Angeles Basin, Italo Petroleum Co. has recompleted No. 1 Brunson and this well was returned to production pumping 20 bbls. of 34.1 gravity oil after the hole had been thoroughly cleaned out and reconditioned.

Central West

Operations in Central Ohio, Kentucky, Illinois, Indiana

By GEORGE A. WHITNEY

FINDLAY, Ohio.—Feb. 27.—Operations have been started on a test for oil in the old Hamilton County natural gas field in Indiana. This test is to be drilled through the Trenton sand, from which gas is produced in that area, to an undetermined depth in search of an oil-bearing sand. In some of the previous wells drilled for gas a showing of 1 or 2 bbls. of oil was made and it is the belief of operators that oil will be found in paying quantities at a lower level. The Trenton sand in Hamilton County, is found at approximately 1,000 feet and over 200 wells have been drilled for gas in that area, although the majority of these were drilled years ago.

Brown & Co. are drilling this well 2,000 feet north of the southwest corner of section 7, Township 19n, Range 4e, in Jackson Township, and many leases are being secured by local operators in this area. There has been very little activity in the central part of Indiana, and this test may revive operations in that district.

There were no completions reported in the Indiana field in the past week but field work is increasing. In Daviess County, section 8, Barr Township, A. T. Spaulding & Co. No. 1 Sadie Beck, is drilling below 600 feet. In section 13, Reeves Township, Midwest Development Corp. No. 1 W. R. Meredith was nearing completion.

In Martin County, section 12, Perry Township, G. C. Curtis & Co. were drilling the No. 1 James Dages.

Hoosier Public Utility Co. were completing the No. 2 Constant Aballe, in section 11, Marion Township, Decatur County, and in section 18, Sandy Creek Township, T. E. Castor is drilling a test on the Daniel Hull property.

In Knox County, section 14, Busseron Township, O. A. Thayer No. 3 Starner Bond was shut down at 141 feet.

LIMA FIELD

Three completions were reported in the Lima field and operations are also increasing in that district. Brown & Co. test on the R. J. Vansicle lease, in section 34, Pleasant Township, Hancock County, was drilled through the Trenton sand at 1,412-35 feet and made 4,000 feet of gas and is pumping 2 bbls. of oil a week. In the same section, Brown & Co. completed No. 1 G. H. Hammond, in the Trenton sand at 1,414-47 feet and this well is pumping 2 bbls. a day.

In section 3, Blanchard Township, Hancock County, V. P. Haven completed No. 2 on the G. H. Hammond farm in the same sand at 1,416-51 feet. This well made a slight show of oil but it has been abandoned.

KENTUCKY FIELD

Four producers and one dry hole were completed in the Kentucky fields. In Ohio County, in the Sunnydale pool, McGowen & Co. completed a test on the Tice Baker farm as a failure.

In the Dundee pool, same county, Elvis Dehart & Co. No. 4 on the Odell heirs property, had a production of 50 bbls. the first 24 hours after a shot and the same operators are drilling No. 5, and are rigged up for No. 6, on this same farm. In the same pool Evans and James Hunt No. 3 on the Cambron heirs lease had an initial production of 50 bbls. after a shot and these operators are rigging up for No. 5 and are drilling No. 4 on this lease.

Iff the same pool Globe Oil & Gas Co. and others completed No. 15 on the Ronnie and Hazel Graham farm with a production of 55 bbls. the first 24 hours. The same operators are drilling No. 16 and are rigging up for No. 17. Henry Scholl No. 4 Alex Whitehouse had an initial production

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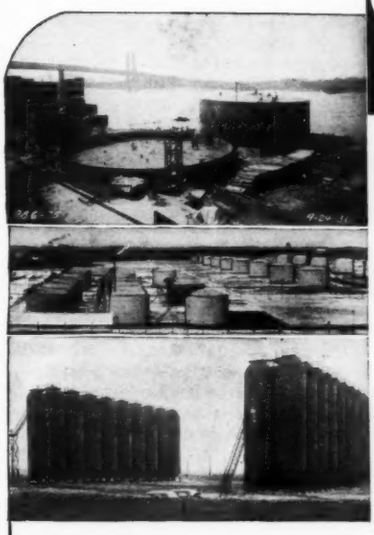

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of 30 bbls. and the same operator is rigging up for No. 5 on this lease.

CENTRAL OHIO FIELD

In Coshocton County, Central Ohio district, section 19, Washington Township, Murphy Petroleum Co. No. 1 George Noland was drilled 27 feet into the Top sand at 3,344 feet and made 50,000 feet of gas naturally. This test may be drilled deeper. In section 3, Franklin Township, Ohio Fuel Gas Co. No. 1 John Lapp made a very good show of gas 1 foot below the Niagara lime at 2,639-2,757 feet and is being drilled in.

The Ohio Fuel Gas Co. No. 1 Ella Postle, in section 6, Clinton Township, Wayne County, was drilled through the Clinton sand at 3,104-09 feet without a show of oil or gas and has been abandoned as a failure.

In Lorain County, Lot 62, Columbia Township, Synder & Wiles drilled a test on the Charles Osborne farm through the Clinton sand at 2,652-56 feet, a second Clinton formation at 2,664-75 feet without a show of oil or gas and has been abandoned. The same operators are spudding on the Mary J. Walker farm in Lot 79, same township. In Lot 96, Grafton Township, Wittmer Oil & Gas Co. No. 1 H. W. Ingersoll was drilled through the second Clinton sand at 2,655-63 feet and made 1,039,000 feet of gas and a small amount of oil after a shot.

In Stark County, section 5, Jackson Township, East Ohio Gas Co. No. 1 K. W. Bender made 4,000,000 feet of gas naturally in the Clinton sand at 4,203-29 feet and had a rock pressure of 1,255 pounds. In section 27, same township, East Ohio Gas Co.'s test on the Society of Precious Blood property, was completed in the Oriskany sand at 2,887-97 feet and made 334,000 feet of gas. In section 21, Plain Township, Lyons & Co. No. 1 John Fasnacht was shot and the volume of gas increased to 900,000 feet.

In Ashland County, section 3, Hanover Township, Ohio Fuel Gas Co. No. 1 D. M. Sigler was drilled to a total depth of 2,974 feet and has been abandoned as a failure.

In section 24, Benton Township, Hocking County, Dowler Oil & Gas Corp. are building a rig for a second test on the J. & D. Barnhart property.

Ohio Fuel Gas Co. No. 1 Millard Romine, in section 10, Rutland Township, Meigs County, was drilled through the Injun sand at 857-63 feet with a small show of gas and was abandoned when the hole filled with water. In section 21, same township, Roberts & Co. No. 3 Jennie Jacks was drilled through the Salt and Maxon sands at 710 feet and 896 feet into the Keener sand at 910-28 feet where it made 100,000 feet of gas. The hole filled with water and the well is being plugged back to 805 feet to shut off the water. In section 14, Rutland Township, Barton & Utsinger has moved a machine on location for a test on the Sherman Buskirk property. In section 19, Lebanon Township, W. H. Carter is moving a machine on the Mona Wolf farm for a test of that property.

In Athens County, Fraction 1, Bern Township, Ohio Fuel Gas Co. No. 1 F. E. Kimes was drilled into the Maxon sand at 1,150-56 feet and was abandoned when the hole filled with water.

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Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Feb. 27.—On the west side of the South Turner Valley structure, Royalite Oil Co. No. 4 Sterling-Pacific, LSD 4, section 33-18-2w5, offsetting Turner Valley Royalties No. 1 producer to the north, got the Madison limestone at 6,734 feet and cemented 6-inch casing at 6,737 feet. The lime was unexpectedly deep, being 341 feet deeper than in Turner Valley Royalties No. 1, less than a quarter mile to the south, and deeper than any of the other west flank wells.

This is the eighth well on the west flank to get the lime, with four now producing or testing production. Turner Valley Royalties No. 1, LSD 13, section 28-18-2w5, is maintaining production around 650 bbls. a day. Royalite Oil Co. No. 3, Sterling Pacific, LSD 13, section 33-18-2w5, a mile to the north, is on steady production and making better than 125 bbls. B. & B. Co. No. 1, LSD 12, section 28-18-2w5, which had a flush production of 2,100 bbls. a day with over 5,000,000 feet of gas has been throttled back to save gas, and is flowing around 1,180 to 1,200 bbls. a day.

Foundation Royalties No. 1, LSD 5, section 21-18-2w5, has cleaned out after drilling up lost bailer and is testing production. After cleaning out rotary mud the well was flushed with high-pressure gas from Highwood-Sarcee No. 2. Flowing by heads, it made around 500 bbls. a day, and experiments are being made with various tubing and back-pressure adjustments to increase production.

In section 21-18-2w5, West Side Royalties No. 1, LSD 3, which got the Madison lime at 5,940 feet, is below 6,181 feet and is expected to be the next test to get production. It is the farthest southwest test in the lime, more than a quarter mile south and a little east of the Foundation producer. In the same section, Newfold Royalties No. 1, LSD 11, is below 5,890 feet after getting the lime at 5,810 feet and cementing casing at 5,832 feet. Results at the West Side well will have considerable influence on prospective drilling south and west of the proven field.

In the West Central area, Dalhousie Oil Co. No. 8, LSD 6, section 30-19-2w5, is preparing to resume after getting the lime at 6,178 feet and cementing casing at 6,203 feet. Tanks and separators are being set up.

West Side Drilling

On the west flank of the structure, Brown Oil Corp. No. 3, LSD 15, section 19-19-2w5, has let contract. Mercury Royalties No. 1, LSD 8, section 5-19-2w5, is below 1,540 feet. Mercury Oils No. 8, LSD 3, section 4-19-2w5, is deepening after setting 21-inch conductor pipe at 207 feet.

In section 33-18-2w5, Royalite Oil Co. No. 5 Sterling Pacific, LSD 12, is rigging.

In section 28-18-2w5, Richland Royalties No. 1, NE quarter LSD 12, has spudded, and is drilling for large casing. Richland Royalties No. 2, LSD 5, same section, is running 10-inch casing to around 4,050 feet. Richland No. 3, LSD 14, is below 4,350 feet.

In section 29-18-2w5, steel derrick for Granville Oils No. 1, LSD 16, was blown down by a blizzard, and is being reerected. Commoil No. 1, LSD 15, has cellar and cribbing finished and is waiting for derrick and rotary outfit from Sovereign Royalties No. 1, which will be moved as soon as the roads are clear. Sunalta Petroleums No. 1, LSD 12, same section, has let drilling contract to Pat K. Adams. The company is sponsored by Ray R. Knight and associates of Vancouver, British Columbia, and location is about three-fourths of a mile west of B. & B. Co. No. 1 producer. Drilling will start in March. National Petroleum Co. No. 1, S half LSD 8, same section, is working on cellar.

In section 20-18-2w5, Monarch Royalties No. 1, LSD 9, is below 1,107 feet. Brown Oil Corp. No. 2, LSD 8, has let contract. Sunset Oils is arranging for No. 1 test in LSD 7, south of Brown No. 2 and southwest of the Monarch well. The Sunset company is sponsored by Alberta Pacific Consolidated Oils, Ltd., and the McDougall-Segur Exploration Co. of Canada, Ltd.

In section 17-18-2w5, Prairie Royalties No. 1 C. & E., LSD 16, has rotary equipment on the ground and is moving boilers. It will probably spud early in March. Flank Petroleums, Ltd., of Calgary is arranging for No. 1 test in NW quarter same section. Paul von Weymarn is president and W. G. Egbert vice president of this company. Coronation Royalties No. 1 has been spotted in LSD 10, same section, on acreage secured by the Anglo-Canadian Development & Holdings Co. from Calgary & Edmonton Corp. In section 16-18-2w5, Brown Oil Corp. No. 1, LSD 14, has let contract.

In section 9-18-2w5, National Petroleum Corp. No. 2, LSD 14, is reconstructing derrick blown down by a storm.

New Locations Made

New locations include three in section 9-18-2w5, all farther south than National Petroleum Corp. No. 2. Economy Royalties No. 1 has been spotted in LSD 8, approximately a half mile south and the same distance east of the National Petroleum test. The company, incorporated under Alberta charter, is a subsidiary of Economy Oils, Ltd., and acreage was secured from A. H. Mayland of Calgary. Drilling is scheduled to start within 90 days. Marine Petroleums, Ltd., organized in Toronto, will drill No. 1 in LSD 11, same section, immediately south of National Petroleum No. 2. The company also holds LSD 6, immediately to the south. Officers are: President, Robert McKay, Winnipeg; secretary-treasurer, W. Ralph Salter, Toronto; directors, William A. Toole, Calgary; Walter Hastings, Winnipeg, and Roy D. Law, Beeton, Ontario. D. & D. Oil Co. No. 1 has been spotted in LSD 12, same section. Rotary tools will be used, the test to spud within four months. Officers of the company are J. M. Dillon, president; Jack Drumheller, vice president; E. J. Yorath, secretary.

In section 16-18-2w5, Richwell Oil Co., organized by W. Fay Becker and associates of Calgary, has been located in LSD 5, close to the banks of the Highwood River and about a mile south of Foundation Royalties No. 1 producer. United Oils, Ltd., of Calgary, has spotted a test in LSD 1, section 20-18-2w5, on acreage secured from Okalta Oils, Ltd. The United was one of the pioneer Calgary companies, drilling the first North Turner Valley test in 1914. F. J. Green is president.

In section 29-18-2w5, west of B. & B. Oil Co. No. 1 producer, three new locations have been made. Alco Oils, Ltd., organized by Walter Wait and Tom Scott, is planning to drill in LSD 13. Command Oils, Ltd., has been organized with head office at Calgary to develop LSD 11, section 29-18-2w5, purchased from Commonwealth Petroleums, Ltd., and LSD 14, acquired from the Annand Syndicate. Officers of the company are: President, Herbert Greenfield; vice president, Reg. G. Smith; secretary-treasurer, J. Coxon; directors, E. L. Baker, C. J. Stewart. No. 1 will be started early this spring, rotary tools being used. Acreage is subject to 20 per cent royalty including 10 per cent to the Alberta government.

Mutual Oil Co. has located No. 1 on LSD 6, section 29-18-2w5, a half mile west of B. & B. No. 1 producer. Acreage is subject to 40 per cent royalty interest of Rand Petroleums, Ltd., which includes government royalty. W. D. Ransom, of Nanton, Alberta, is president, and the directors fo the Mutual company include E. E. Heagle, Carl S. Bell, Dr. J. Zimmerman and J. J. O'Connor.

In section 32-18-2w5, west of the Sterling-Pacific acreage, Roxana Petroleums No. 2 has been spotted in S half LSD 12. Union Drilling Co. of Calgary will handle the contract, starting with standard tools and finishing with rotary, and spudding within about a month. The Roxana company has a sublease on LSD 7, section 21-18-2w5, where No. 3 will be drilled contingent on the results secured in the Newfold and Westside wells in the same area. Shamrock Petroleums No. 1 has been located in acreage in the S half LSDs 13 and 14 in the same section. Officers are: President, J. J. O'Connor; directors, Dr. J. Zimmerman, Carl S. Bell,

(Continued on Page 99)

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Barnsdall-Rio Grande, No. 19 Elwood, Santa Barbara	15- 4-29	3,294	rigging up
Signal Oil & Gas, No. 98-9 Elwood, Santa Barbara Co.	tideland	2,990	sd. sh. drlg.
Bush Oil Co., No. 4 Santa Maria, Santa Barbara Co.	30-10-33	2,554	sd. sh. drlg.
Shaffer, W. D., No. 1 Santa Maria, Santa Barbara Co.	9- 9-33	5,003	idle
Macrate, A. N., No. 2 Santa Maria, Santa Barbara Co.	26-10-34	3,900	pump. 630 b.d.
Echo Oil Co., No. 1 Santa Maria, Santa Barbara Co. ..	23-10-34	3,449	pump. 70 b.d.
Union Oil Co., No. 2 Santa Maria, Santa Barbara Co.	30-10-33	3,250	sd. sh. drlg.
Union Oil Co., No. 11 Orcutt, Santa Barbara Co.	26- 9-34	4,083	cleaning out
Union Oil Co., No. 12 Orcutt, Santa Barbara Co.	26- 9-34	3,660	sd. sh. drlg.
Union Oil Co., No. 17 Orcutt, Santa Barbara Co.	26- 9-34	3,298	sd. sh. drlg.
Valley Oil Co., No. 1 Casmalia, Santa Barbara Co. ...	20- 9-34	1,410	sd. sh. drlg.
Barnsdall Oil Co., No. 9 Gato Ridge, Santa Barbara	9- 8-32	2,465	sd. sh. drlg.
Field Gasoline Corp., No. 1 Gato Ridge, Santa Barbara	4- 8-32	2,812	fish. bailer
Stewart-Carter Oil, No. 1 Gato Ridge, Santa Barbara	4- 8-32	2,311	cmtd. 2,160
Moore, Inc., No. 1 Santa Maria, Santa Barbara Co. ...	25-10-35	8,021	cleaning out
Nine Springs Oil Co., No. 1 Los Olivos, Santa Barbara	9- 7-30	3,080	cleaning out
Fisher, Dan, No. 1 Cuyama, Santa Barbara Co.	28-11-28	640	sd. sh. drlg.
Texas Co., No. 132 Shiells, Ventura Co.	4- 3-19	2,798	sd. sh. drlg.
Calumet Oil Co., No. 16 Shiells, Ventura Co.	3- 3-19	3,545	sd. sh. drlg.
Merchants Pet. Co., No. 7 Sespe, Ventura Co.	1- 4-20	636	sd. sh. drlg.
Condor Oil Co., No. 1 Sespe, Ventura Co.	6- 4-19	1,486	cleaning out
Speik Oil Co., No. 2 Sespe, Ventura Co.	33- 5-19	1,790	sd. sh. drlg.
Colima Oil Co., No. 2 Sespe, Ventura Co.	25- 5-19	999	cmtd. 972
Bolsa Chica Oil Co., No. 4 Temescal, Ventura Co.	4- 4-18	4,584	P.B. 3,560
Bolsa Chica Oil Co., No. 5 Temescal, Ventura Co.	5- 4-18	760	sd. sh. drlg.
Pacific Western Oil Co., No. 10 Temescal, Ventura Co.	3- 4-18	1,520	sd. sh. drlg.
St. Louis Oil Co., No. 3 Ojai, Ventura Co.	13- 4-24	527	hd. sd. drlg.
Vaca Oil Co., No. 1 Oxnard, Ventura Co.	6- 1-21	2,822	idle
Continental Oil Co., No. 1 Red Mountain, Ventura Co.	7- 3-23	5,264	cmtd. 2,769
C. C. M. Oil Co., No. 2 Padre Canyon, Ventura Co. ...	23- 3-24	6,465	fish. D.P.
Honolulu Oil Corp., No. 1 South Mountain, Ventura	23- 3-21	6,744	fish. D.P.
Calco Pet. Corp., No. 4 South Mountain, Ventura Co.	17- 3-20	3,510	sd. sh. drlg.
Associated Oil Co., No. 27 Hartman, Ventura, Ventura	22- 3-23	5,930	sd. sh. drlg.
Associated Oil Co., No. 25 V.L.W., Ventura, Ventura	23- 3-23	7,055	redrlg. 6,375
Associated Oil Co., No. 28 Lloyd, Ventura, Ventura	27- 3-23	6,300	sh. sh. drlg.
Associated Oil Co., No. 64 Lloyd, Ventura, Ventura	27- 3-23	910	sd. sh. drlg.
Associated Oil Co., No. 137 Lloyd, Vetnura, Ventura	27- 3-23	2,180	sd. sh. drlg.
Shell Oil Co., No. 89 Taylor, Ventura, Ventura Co. ...	30- 3-23	7,025	cmtd. 6,996
Shell Oil Co., No. 34 Gosnell, Ventura, Ventura Co. ...	23- 3-23	7,563	redrlg. 7,121
General Pet. Corp., No. 17 Bernard, Ventura, Ventura	23- 3-23	6,678	O.S. drlg.
Continental Oil Co., No. 6 San Miguelito, Ventura Co.	24- 3-24	5,739	P.B. 5,617
C. C. M. Oil Co., No. 13-B Rincon, Ventura Co.	8- 3-24	2,000	sd. sh. drlg.
General Pet. Corp., No. 3-A Rincon, Ventura Co.	8- 3-24	4,512	redrlg. 4,445
Surf Oil Co., No. 4 S.P., Rincon, Ventura Co.	8- 3-24	3,865	rig. to pump
Lube Oil Co., No. 1 Devils Den, Kern Co.	2-25-18	3,691	br. sh. drlg.
Den Pet. Co., No. 1 Devils Den, Kern Co.	20-25-19	3,280	sd. sh. drlg.
Associated Oil Co., No. 10-A-3 Lost Hills, Kern Co. ..	11-26-20	1,126	cleaning out
Standard Oil Co., No. 3 United, Lost Hills, Kern Co. ..	2-26-20	1,052	cmtd. 965
Peters Royalty Corp., No. 2 McKittrick, Kern Co. ...	32-29-22	1,698	O.S. drlg.
Continental Oil Co., No. 1 Wasco, Kern Co.	8-27-24	9,545	cmtd. D.P.
Belridge Oil Co., No. 14-35 North Belridge, Kern Co.	35-27-20	8,041	hd. sh. drlg.
Belridge Oil Co., No. 24-35 North Belridge, Kern Co.	35-27-20	1,853	sd. sh. drlg.
Belridge Oil Co., No. 62-27 North Belridge, Kern Co.	27-27-20	5,627	cmtd. 5,627
Belridge Oil Co., No. 21-1 North Belridge, Kern Co. ..	1-28-20	4,650	sd. sh. drlg.
Italo Pet. Co., No. 1 Kern Front, Kern Co.	17-28-27	1,802	sd. sh. drlg.
Tide Water Associated, No. 3 Kern Front, Kern Co. ..	4-28-27	2,610	rigging up
Honolulu Oil Corp., No. 68 Kern Front, Kern Co.	8-28-27	2,876	sd. sh. drlg.
M. H. Whittier Co., No. 3 Kern Front, Kern Co.	16-28-27	2,848	pump. 85 b.d.
Cedar Oil Co., No. 1 Gill, Kern Front, Kern Co.	8-28-27	2,989	idle
Calif. Star Oil Co., No. 7-80 Kern Front, Kern Co. ...	22-28-27	2,654	pump. 130 b.d.
Seskayden Oil Co., No. 3 Kern Front, Kern Co.	17-28-27	2,884	P.B. 2,870
Standard Oil Co., No. 3 Ward, Kern Front, Kern Co. ..	24-28-27	1,995	rig. to pump
Standard Oil Co., No. 4-9 Kern Front, Kern Co.	9-28-27	2,785	cmtd. 2,740
Pioneer Oil Co., No. 1 Kern Front, Kern Co.	18-28-28	1,560	sd. sh. drlg.
National Oil Co., No. 9 Gates, Kern Front, Kern Co.	2-28-29	1,450	rigging up
McManus, Thomas, No. 2 Kern River, Kern Co.	2-29-28	410	pump 5 b.d.
Golden Bear Oil Co., No. 5 Premier, Kern Co.	32-27-27	2,678	pump. 255 b.d.
Bojaki Oil Co., No. 1 Premier, Kern Co.	28-27-27	1,500	cleaning out
Framac Oil Co., No. 3 Premier, Kern Co.	22-27-27	1,351	O.S. drlg.
Ring Oil Co., No. 3 Knapp, Mount Poso, Kern Co.	28-26-28	1,095	sd. sh. drlg.
Harp, E. J., No. 1 Mount Poso, Kern Co.	27-26-28	1,545	bailed dry
Goldman, F., No 2 Mount Poso, Kern Co.	35-27-28	1,506	rig. to pump
W. H. G. Oil Co., No. 1 McVan, Mount Poso, Kern Co.	10-27-27	1,570	bailing
Magee, H. H., No. 2 Fruitvale, Kern Co.	23-29-27	3,195	cmtd. 3,160
H. & H. Oil Co., No. 1 Fruitvale, Kern Co.	23-29-27	2,874	sd. sh. drlg.
Western Gulf Oil Co., No. 34 Fruitvale, Kern Co. ...	21-29-27	6,989	idle
Kasey & Associates, No. 1 Fruitvale, Kern Co.	23-29-27	3,114	recmtd. 3,061
Meridian Oil Co., No. 2 Turner, Fruitvale, Kern Co. ...	23-29-27	3,139	pump. 180 b.d.
Magnet Oil Co., No. 4 Fruitvale, Kern Co.	21-29-27	4,160	cmtd. 4,108
Vesta Oil Co., No. 1 Mountain View, Kern Co.	19-30-29	1,581	sd. sh. drlg.
Wood-Callahan Oil Co., No. 3 Mountain View, Kern Co.	25-30-28	5,296	sd. sh. drlg.
Hogan Pet. Co., No. 4 Symons, Mountain View, Kern	5-31-29	4,085	sd. sh. drlg.
Hogan Pet. Co. No. 8 Wharton, Mountain View, Kern	32-30-29	3,271	sd. sh. drlg.
Hogan Pet. Co., No. 9 Porter, Mountain View, Kern	29-30-29	6,098	pump. water
Liko Pet. Co., No. 1 Mountain View, Kern Co.	19-30-29	3,980	sd. sh. drlg.
Buffalo Oil Co., No. 6 Mountain View, Kern Co.	19-30-29	4,650	O.S. drlg.
Standard Oil Co., No. 4 Mabry, Mountain View, Kern	18-30-29	4,955	sd. sh. drlg.
Ohio Oil Co., No. 1-B Derby, Mountain View, Kern	33-30-29	5,134	sd. sh. drlg.
Mohawk Pet. Co., No. 3 Hood, Mountain View, Kern	30-30-29	8,689	P.B. 6,015
Buffalo Oil Co., No. 1 Edison, Kern Co.	24-30-29	816	pump. 40 b.d
Johnson-Leaf Oil Co., No. 1 Edison, Kern Co.	24-30-29	1,525	cleaning out
Mohawk Pet. Co., No. 3 Earl, Arvin, Kern Co.	4-31-29	4,982	sd. sh. drlg.
General Pet. Corp., No. 1 Arvin, Kern Co.	26-31-29	7,395	cleaning out
Arkelo Oil Co., No. 1 Lerdo, Kern Co.	23-28-26	8,621	br. sh. drlg.
Associated Oil Co., No. 1 Rio Bravo, Kern Co.	30-29-25	8,303	redrlg. 8,302
Continental Oil Co., No. 1 Rosedale, Kern Co.	12-29-26	3,552	sd. sh. drlg.
Standard Oil Co., No. 11-2 Greeley, Kern Co.	20-29-26	7,410	sd. sh. drlg.
Standard Oil Co., No. 11-3 Greeley, Kern Co.	20-29-26	3,571	sd. sh. drlg.
Standard Oil Co., No. 12-1 Greeley, Kern Co.	30-29-26	6,510	sd. sh. drlg.
Standard Oil Co., No. 14-1 Greeley, Kern Co.	4-30-26	6,496	sd. sh. drlg.
Union Oil Co., No. 1 San Emidio, Kern Co.	34-11-22	3,815	sd. sh. drlg.
Standard Oil Co., No. 9-1 Ten Section, Kern Co. ...	34-30-26	8,915	P.B. 8,158
Shell Oil Co., No. 78-30 Ten Section, Kern Co.	30-30-26	8,035	O.S. drlg.
Shell Oil Co., No. 34-29 Ten Section, Kern Co.	29-30-26	8,420	cleaning out
Sinal Oil & Gas Co., No. 1 Ten Section, Kern Co. ...	21-30-27	5,700	sd. sh. drlg.
Superior Oil Co., No. 8 Ten Section, Kern Co.	11-30-26	10,409	cmtd. 10,380
C. C. M. Oil Co., No. 26-21 Midway-Sunset, Kern Co.	21-32-23	2,335	cleaning out
C. C. M. Oil Co., No. 33-21 Midway-Sunset, Kern Co.	21-32-23	2,380	br. sh. drlg.
C. C. M. Oil Co., No. 1-J Midway-Sunset, Kern Co.	21-32-23	2,095	redrlg. 2,020
Hancock Oil Co., No. 5 Midway-Sunset, Kern Co. ...	8-11-23	2,164	sd. sh. drlg.
Five Points Oil Co., No. 2-4 Midway-Sunset, Kern Co.	18-11-23	987	pumping test
Hallmark Oil Co., No. 6 Fried, Midway-Sunset, Kern	25-12-24	2,776	sd. sh. drlg.
General Pet. Corp., No. 49 Midway-Sunset, Kern Co.	24-31-23	4,353	sd. sh. drlg.
R. & W. Oil Co., No. 4 Midway-Sunset, Kern Co. ...	6-11-23	1,571	sd. sh. drlg.
Shell Oil Co., No. 1 Midway-Sunset, Kern Co.	22-32-23	2,112	pump. 330 b.d.
Merritt-Annex Oil Co., No. 3 Midway-Sunset, Kern Co.	25-12-24	2,893	pump. 360 b.d.
Standard Oil Co., No. 39-23-D Midway-Sunset, Kern	23-32-24	3,401	sd. sh. drlg.
Standard Oil Co., No. 53-33-D Midway-Sunset, Kern	33-32-24	3,080	pump. 698 b.d.
Burkholder Oil Co., No. 2 Midway-Sunset, Kern Co.	23-32-23	1,380	sd. sh. drlg.
Gibson Oil Co., No. 4 O'Brian, Midway-Sunset, Kern	6-11-23	3,065	cleaning out
Richfield Oil Co., No. 15 Midway-Sunset, Kern Co.	6-32-23	960	sd. sh. drlg.
McGray, Robert, No. 2 Midway-Sunset, Kern Co. ...	22-32-23	2,435	P.B. 2,386
Zamlock, Carl, No. 2 Midway-Sunset, Kern Co.	22-32-23	931	idle
Texas Co., No. 18 Midway-Sunset, Kern Co.	32-32-24	3,098	rig. to pump
Birch-Ranch Oil Co., No. 2 Midway-Sunset, Kern Co.	22-32-23	1,797	O.S. drlg.
Valley Oil Co., No. 1 Midway-Sunset, Kern Co.	18-32-23	1,421	sd. sh. drlg.
Pattiway Oil Co., No. 1 Midway-Sunset, Kern Co. ...	12-11-24	1,797	cleaning out
Oil, Inc., No. 3 Midway-Sunset, Kern Co.	7-11-23	1,645	pumping test
Hoyt, Otis, No. 5 Midway-Sunset, Kern Co.	7-11-23	1,640	sd. sh. drlg.
Quality Oil Co., No. 4 Bull, Midway-Sunset, Kern Co.	22-32-23	1,650	sd. sh. drlg.
Quality Oil Co., No. 5 Bull, Midway-Sunset, Kern Co.	22-32-23	1,590	sd. sh. drlg.
Honolulu Oil Corp., No. 17 Midway-Sunset, Kern Co.	14-32-24	2,801	sd. sh. drlg.
Iriquois Oil Co., No. 1 Midway-Sunset, Kern Co. ...	7-11-23	974	sd. sh. drlg.
Petrolia Royalties, No. 1 Midway-Sunset, Kern Co. ..	21-32-22	730	sd. sh. drlg.
St. Helens Pet. Co., No. 1 Midway-Sunset, Kern Co.	22-32-24	3,645	pump. 10 b.d.
Buffalo Oil Co., No. 1 Tejon, Kern Co.	5-10-19	2,082	sd. sh. drlg.
Reserve Oil & Gas Co., No. 33-1 Tejon, Kern Co. ...	33-11-19	4,989	idle
Reserve Oil & Gas Co., No. 33-2 Tejon, Kern Co. ...	33-11-19	4,495	redrlg. 4,277
Reserve Oil & Gas Co., No. 33-3 Tejon, Kern Co. ...	33-11-19	4,431	shut in
Ohio Oil Co., No. 2 Tejon, Kern Co.	21-11-19	6,662	will deepen
Western Gulf, No. 3 Cantua, Fresno Co.	3-17-15	8,530	cleaning out
Union Oil Co., No. 2 Kettleman North, Fresno Co. ...	29-21-17	8,500	cleaning out
K. N. D. A., No. 4-18-J Kettleman North, Fresno Co.	18-21-17	9,400	P.B. 8,227
K. N. D. A., No. 25-20-J Kettleman North, Fresno Co.	20-21-17	8,650	cleaning out
K. N. D. A., No. 21-30-J Kettleman North, Fresno Co.	30-21-17	8,725	flow. 182 b.d.
K. N. D. A., No. 36-28-J Kettleman North, Fresno Co.	28-21-17	7,060	gr. sd. drlg.
K. N. D. A., No. 63-28-J Kettleman North, Fresno Co.	28-21-17	8,480	P.B. 8,050
K. N. D. A., No. 65-28-J Kettleman North, Fresno Co.	28-21-17	4,482	sd. sh. drlg.
K. N. D. A., No. 83-24-H Kettleman North, Fresno Co.	24-21-16	8,935	P.B. 8,882
K. N. D. A., No. 85-32-J Kettleman North, Fresno C	32-21-17	8,485	redrlg. 8,271
K. N. D. A., No. 63-34-J Kettleman North, Fresno Co.	34-21-17	5,189	sd. sh. drlg.
Associated Oil Co., No. 3 Kettleman North, Kings Co.	35-21-17	8,858	cleaned out
Standard Oil Co., No. 8-19-J Kettleman North, Fresno	19-21-17	8,120	P.B. 8,082
Standard Oil Co., No. 85-19-J Kettleman North, Fresno	19-21-17	8,619	fish. D.P.
Standard Oil Co., No. 38-33-J Kettleman North, Fresno	33-21-17	6,588	sd. sh. drlg.
Standard Oil Co., No. 78-3-P Kettleman North, Kings	3-22-17	5,887	sd. sh. drlg.
Standard Oil Co., No. 46-19-V Kettleman Middle, Kings	19-23-19	7,962	idle
Temblor Oil Co., No. 1 Kettleman Middle, Kings Co.	25-23-18	5,935	cleaning out
Associated Oil Co., No. 2 Avenal, Kings Co.	35-23-17	1,960	redrlg. 1,045
Calif. Producing Co., No. 1 Pattiway, San Luis Obispo	19-10-24	751	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Bldg., building.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.P., casing pressure.
Cd or Crd., cored.
C.D., corrected depth.
Cg., coring.
C.L., center line.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure. also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.R.T., rigging up rotary tools.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sd. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.i., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporary abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., wait on standard rig.
Wtr., water.

United Oil Co., No. 1 Panorama, San Luis Obispo Co.	2-32-21	2,375	idle
Union Oil Co., No. 1 Huasna, San Luis Obispo Co. ...	22-32-15	4,918	dry; abd.
Lewis, A. O., No. 1 Pecho, San Luis Obispo Co.	34-30-10	2,310	fishing
Cholame Synd., No. 1 Cholame, San Luis Obispo Co.	10-25-15	3,687	idle
Texas Co., No. 1 King City, Monterey Co.	30-19-7	2,471	sd. sh. drlg.
Shell Oil Co., No. 1 Pleyto, Monterey Co.	34-24-10	8,994	P.B. 8,750
Shell Oil Co., No. 2 Pleyto, Monterey Co.	34-24-10	6,642	sd. sh. drlg.
Texas Co., No. 2 Eureka, Humboldt Co.	22- 3-1	7,418	cleaning out
Associated Oil Co., No. 1 Sargent, San Benito Co. ...	5-12-4	6,256	hd. sd. drlg.
Standard Oil Co., No. 5 McDonald Island, San Joaquin	31- 2-5	5,312	cleaning out
Buttes Oilfields, Ltd., No. 1 Kent, Sutter Co.	2-15-1	5,098	will cmt.
Jennings, E. P., No. 1 Allensworth, Tulare Co.	4-24-23	2,708	cleaning out
Trico Oil & Gas Co., No. 1 Tipton, Tulare Co.	27-21-25	4,621	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Caminol Oil Co., No. 1 El Segundo, Los Angeles Co.	18- 3-14	6,901	sd. sh. drlg.
Caminol Oil Co., No. 2 El Segundo, Los Angeles Co.	18- 3-14	6,774	sd. sh. drlg.
Richfield Oil Co., No. 2 El Segundo, Los Angeles Co.	18- 3-14	7,319	swabbing
Richfield Oil Co., No. 4 El Segundo, Los Angeles Co.	18- 3-14	7,186	sd. sh. drlg.
Ohio Oil Co., No. 2 El Segundo, Los Angeles Co.	7- 3-14	7,341	flow. 270 b.d.
Texas Co., No. 2-1 El Segundo, Los Angeles Co.	17- 3-14	7,436	sd. sh. drlg.
Texas Co., No. 1 Security, El Segundo, Los Angeles Co.	18- 3-14	6,171	sd. sh. drlg.
Republic Pet. Co., No. 3 El Segundo, Los Angeles Co.	18- 3-14	7,401	sd. sh. drlg.
Republic Pet. Co., No. 4 El Segundo, Los Angeles Co.	18- 3-14	6,590	sd. sh. drlg.
Republic Pet. Co., No. 5 El Segundo, Los Angeles Co.	18- 3-14	4,980	sd. sh. drlg.
Royalty Service Corp., No. 1 El Segundo, Los Angeles	7- 3-14	6,661	sd. sh. drlg.
Union Oil Co., No. 1 El Segundo, Los Angeles Co. ...	18- 3-14	7,459	sd. sh. drlg.
Leora Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 2-14	3,852	sd. sh. drlg.
Bryan & Young, No. 1 Lawndale, Los Angeles Co. ...	20- 3-14	6,195	will deepen
Signal Finance Co., No. 1 Hawthorne, Los Angeles Co.	10- 3-14	9,395	cleaning out
Imperial Gypsum, No. 1 Moneta, Los Angeles Co. ...	35- 3-14	7,209	cleaning out
C. C. M. Oil Co., No. 18 Torrance, Los Angeles Co. ...	31- 3-14	4,467	pump. 50 b.d.
C. C. M. Oil Co., No. 15 Torrance, Los Angeles Co. ...	31- 3-14	3,100	will deepen
Fullerton Oil Co., No. 4 Torrance, Los Angeles Co. ...	18- 4-14	4,626	pump. 38 b.d.
Two & One Oil Co., No. 6 Torrance, Los Angeles Co.	31- 3-14	2,180	sd. sh. drlg.
Willett, P. W., No. 1 Torrance, Los Angeles Co.	18- 4-14	2,194	sd. sh. drlg.
Hunt Oil Co., No. 1 Torrance, Los Angeles Co.	18- 4-14	4,761	P.B. 4,659
Abrams, J., & Associates, No. 1 Torrance, Los Angeles	16- 4-14	3,640	redrlg. 2,516
McLaren & Associates, No. 1 Palos Verdes, L. Angeles	27- 4-14	3,992	redrlg. 1,750
Country Club Oil Co., No. 1 Inglewood, Los Angeles Co.	19- 2-14	690	sd. sh. drlg.
Shell Oil Co., No. 4 Rubel, Inglewood, Los Angeles Co.	8- 2-14	2,507	redrlg. 2,045
Standard Oil Co., No. 82 Inglewood, Los Angeles Co.	8- 2-14	1,322	sd. sh. drlg.
Shell Oil Co., No. 89 Reyes, Dominguez, Los Angeles	33- 3-13	5,830	sd. sh. drlg.
Shell Oil Co., No. 90 Reyes, Dominguez, Los Angeles	33- 3-13	6,283	sd. sh. drlg.
Shell Oil Co., No. 2 Manuel, Dominguez, Los Angeles	33- 3-13	4,300	pump. 211 b.d.
Union Oil, No. 48 Callender, Dominguez, Los Angeles	33- 3-13	7,060	sd. sh. drlg.
Union Oil, No. 50 Callender, Dominguez, Los Angeles	33- 3-13	9,340	sd. sh. drlg.
Union Oil, No. 53 Callender, Dominguez, Los Angeles	33- 3-13	4,761	sd. sh. drlg.
Union Oil Co., No. 9 Carson, Dominguez, Los Angeles	33- 3-13	6,520	sd. sh. drlg.
Barnsdall Oil Co., No. 10 Rosecrans, Los Angeles Co.	20- 3-13	7,630	hd. sd. drlg.
Shell Oil Co., No. 1 Rosecrans, Los Angeles Co.	20- 3-13	7,618	sd. sh. drlg.
Hildon Oil Co., No. 1 Flood Control, Los Angeles Co.	11- 4-13	6,043	redrlg. 5,365
Union Oil Co., No. 16 D.R., Playa Del Rey, Los Angeles	27- 2-15	5,630	sd. sh. drlg.
Barnsdall Oil Co., No. 1 Newhall, Los Angeles Co. ...	26- 3-17	6,276	will deepen
Selegna Oil Co., No. 3 Wilmington, Los Angeles Co. ..	33- 4-13	2,585	cmtd. 2,583
General Pet. Corp., No. 2-E Wilmington, Los Angeles	5- 5-13	1,584	sd. sh. drlg.
General Pet. Corp., No. 4-E Wilmington, Los Angeles	5- 5-13	1,471	sd. sh. drlg.
General Pet. Corp., No. 1-F Wilmington, Los Angeles	33- 4-13	1,840	sd. sh. drlg.
Getty Oil Co., No. 2 Wilmington, Los Angeles Co. ...	33- 4-13	3,180	sd. sh. drlg.
Brain, Cooper & Haney, No. 1 Wilmington, L. Angeles	33- 4-13	1,291	sd. sh. drlg.
Bankline Oil Co., No. 7-I Wilmington, Los Angeles Co.	33- 4-13	3,225	cmtd.
Wilmington O. & D., No. 1 Wilmington, Los Angeles	33- 4-13	2,533	cmtd.
Wilbur, V.R.G., No. 1 Wilmington, Los Angeles Co. ...	4- 5-13	1,591	sd. sh. drlg.
Sovereign Oil Co., No. 3 Wilmington, Los Angeles Co.	33- 4-13	4,220	sd. sh. drlg.
Pacific Western Oil, No 1-P Wilmington, Los Angeles	33- 4-13	3,161	sd. sh. drlg.
Pacific Western Oil, No. 1-M Wilmington, Los Angeles	33- 4-13	2,527	cmtd. 2,525
Royalty Service, No. 2-C Wilmington, Los Angeles Co.	5- 5-13	1,571	sd. sh. drlg.
Gauthier Oil Co., No. 2 Wilmington, Los Angeles Co.	27- 4-13	1,454	sd. sh. drlg.
Drillers, Inc., No. 1 Whittier, Los Angeles Co.	22- 2-11	831	sd. sh. drlg.
Honolulu Oil Corp., No. 1 Puente, Los Angeles Co. ...	15- 2-10	3,055	gr. sd. drlg.
Richfield Oil Co., No. 2 Nutt, Montebello, Los Angeles	5- 2-11	5,892	sd. sh. drlg.
Richfield Oil, No. 1 Estrada, Montebello, Los Angeles	5- 2-11	3,382	redrlg. 2,765
Universal Consd., No. 1-J Nutt, Montebello, L. Angeles	5- 2-11	6,687	hd. sd. drlg.
Texas Co., No. 16 Baldwin, Montebello, Los Angeles	6- 2-11	3,580	sd. sh. drlg.
St. Helens Pet., No. 7 P.&H., Montebello, Los Angeles	5- 2-11	5,883	cmtd. 5,762
Union Oil Co., No. 26 Montebello, Los Angeles Co. ...	1- 2-12	2,905	sd. sh. drlg.
Hobbs Pet. Corp., No. 1 Long Beach, Los Angeles Co.	29- 4-12	2,994	recmtd. 2,920
Hathaway, No. 2 Fulton, Santa Fe Springs, L. Angeles	6- 3-11	4,650	P.B. 3,500
Union Oil Co., No. 100 Santa Fe Springs, Los Angeles	6- 3-11	9,640	sd. sh. drlg.
Italo Pet. Corp., No. 1 Santa Fe Springs, Los Angeles	5- 3-11	4,525	reaming
Julian & Criswell, No. 1 Walnut, Los Angeles Co. ...	5- 2-9	1,350	hd. sh. drlg.
Terry, George, No 2 Crane, Huntington, Orange Co.	2- 6-11	3,958	cleaning out
Petroleum Co., No. 5 Wilson, Huntington, Orange Co.	2- 6-11	3,650	sd. sh. drlg.
Re-Mine Oil Co., No. 2 Huntington, Orange Co.	2- 6-11	4,260	cmtd. 4,255
Texas Co., No. 4 V.M., Huntington, Orange Co.	24- 5-11	4,637	swabbing
Richrow Oil Co., No. 2 Huntington, Orange Co.	24- 5-11	3,263	sd. sh. drlg.
Orco Oil Co., No. 5 Huntington, Orange Co.	2- 6-11	4,400	sd. sh. drlg.
South Basin Oil Co., No. 94 Huntington, Orange Co. ..	2- 6-11	4,060	pumping test
Elliott Oil Co., No. 1 Huntington, Orange Co.	34- 5-11	4,066	P.B. 3,876
M. F. K. Oil Co., No. 1 Huntington, Orange Co.	2- 6-11	2,854	pump. 35 b.d.
Richfield Oil, No. 1 Community, Huntington, Orange	34- 5-11	3,947	C.P. 3,752
Richfield Oil, No. 3 Anchor, Huntington, Orange Co.	34- 5-11	4,652	rig. to pump
Commander Oil Co., No. 1 Newport, Orange Co.	29- 6-10	5,800	br. sh. drlg.
Fullerton Oil Co., No. 20 Brea, Orange Co.	2- 3-10	5,154	redrlg. 3,772
Standard Oil Co., No. 62 Emery, West Coyote, Orange	13- 3-11	3,969	P.B. 3,889
Bandini Pet. Co., No. 1 East Coyote, Orange Co. ...	17- 3-9	2,701	cmtd. 2,692
Dolicia Oil Co., No. 2 East Coyote, Orange Co.	24- 3-10	3,495	reaming
Tide Water A. O. Co., No. 52 East Coyote, Orange Co.	13- 3-10	3,487	cleaning out
Graham & Loftus, No. 1 East Coyote, Orange Co. ...	18- 3-9	4,326	cleaning out
Standard Oil Co., No. 2-S East Coyote, Orange Co. ..	22- 3-10	3,685	reblds. rig
Shell Oil Co., No. 1 Mathis, Anaheim, Orange Co. ...	23- 4-10	3,052	sd. sh. drlg.
Joseph, Arthur, No. 1 Richfield, Orange Co.	29- 3-9	1,540	sd. sh. drlg.
Principal Oil Co., No. 1 Richfield, Orange Co.	36- 3-9	965	sd. sh. drlg.
Bachman Pet. Co., No. 1 Richfield, Orange Co.	29- 3-9	3,810	rig. to pump
Union Oil Co., No. 29 Chapman, Richfield, Orange Co.	30- 3-9	8,610	fish. D.P.
Union Oil Co., No. 43 Chapman, Richfield, Orange Co.	29- 3-9	3,420	sd. sh. drlg.
Union Oil Co., No. 44 Chapman, Richfield, Orange Co	29- 3-9	3,098	sd. sh. drlg.
Standard Oil Co., No. 2-24 Kraemer, Richfield, Orange	32- 3-9	4,550	C.P. 3,978

OKLAHOMA

Week Ending February 27

NORTHERN OKLAHOMA

Beckham County

Carter Oil Co. No. 1 Garrett, NE cor. sec. 11-7n-25w. Drlg. sh. 963 ft.

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. Drlg. 75 ft.

Caddo County

Clyde Becker et al No. 1 Pharris, SE SE NW sec. 24-6-12w. Cellar and pits.

Cleveland County

Helmerich & Payne, Inc. No. 1 Glenn, C NW NE sec. 6-8-1w. Wilcox 7,556 ft.; T.D. 7,584 ft.; D.&A.

W. R. Hollenbeck No. 1 Norman, NW NW NE sec. 17-9-2w. Rig.

Coal County

Ruwoldt & Couch No. 1 McMillan, SW cor. sec. 10-1s-8. T.D. 1,210 ft.; S.D. for csg.

Creek County

J. E. Crosbie, Inc. & Sinclair Prairie Oil Co. No. 1 Bailey, NE NW NW sec. 28-15-7. Prue 2,425 ft.; T.D. 2,430 ft.; setting csg.

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. Drlg. 2,905 ft.

Comoil Oil Co. et al No. 1 Hall, SW SW NE sec. 2-15-7. Drlg. 380 ft.

Garfield County

Arab Oil Co. No. 1 Harkendorf, NE cor. sec. 34-20-3w. Drlg. 2,600 ft.

Garvin County

Hayes Drlg. Co. No. 1 Howell, NW SE NW sec. 34-1-1. Rig.

Grady County

Western White Lily Oil Co. No. 1 Stover, SE SW NW sec. 33-3n-7w. Drk. timbers

Harmon County

Licalko Trust, Ltd. No. 1 Crosnoe, SE SE SW sec. 14-3n-25w. Drlg. L. 3,222 ft.

Penn State Oil Co. No. 1 Cole, C W½ SW NW sec. 21-2n-26w. Loc.

Hughes County

W. W. Bussett No. 1 Field, C NW SW sec. 11-9-11. S.D.

Carson Oil Co. No. 1 Lyter, NE NW SW sec. 31-8-12. Wapa. 3,370 ft.; Union Val. 3,608 ft.; Cromw. 3,699 ft.; drlg. 3,750 ft.

Mid-Western Prod. Co. No. 1 Hill C SE NW sec. 13-9-9. Gilcrease 2,875 ft. (S.L. M.); T.D. 2,880 ft.; 28,000,000 ft. gas; S.I.

Southern Oil Co. No. 1 Buck, C NW SW SW sec. 21-8-10. R.U.S.T.

C. J. Wrightsman No. 1 Diamond, NE NE SE sec. 33-9-9. T.D. 3,475 ft.; abd.

C. J. Wrightsman No. 1-A Diamond, NE NE SE sec. 33-9-9. Drlg. 805 ft.

Kay County

G. A. Brown et al No. 1-A Harris, SW SW NE sec. 14-25-1e. S.D.

Ritz Oil & Gas Co. No. 1 State, NW NE SW sec. 16-29-2w. Stalnkr. 2,934 ft.; Layton 3,325 ft.; Chat 4,035 ft.; drlg. 4,100 ft.

Kiowa County

Argus Pet. Co. No. 1 Osborne, NW cor. NE sec. 9-7-16w. T.D. 1,225 ft.; fsg.

McWhirter & Francis No. 1 Padgett, NE NE NW SE sec. 3-5-17w. S.D. 610 ft.

Latimer County

Cheyenne Oil Co. No. 1 Wilson, C SE SE sec. 15-5-18. Drlg. 2,948 ft.

Le Flore County

McCraw et al No. 1 Tidwell, C NW SE sec. 17-3-22. 10-in. 2,246 ft.; T.D. 2,340 ft.; S.D.

Lincoln County

Anderson-Prichard Oil Corp. No. 1 Colon, C N½ SE SW sec. 28-17-4e. Miss. 4,023 ft.; drlg. 4,146 ft.

Logan County

Anthony & Marshall No. 1 Fruin-Eckman, SE SE SW sec. 4-16-1e. C.O. iron at 4,959 ft.

Harry Blackstock No. 1 Prince, SE NE SW sec. 11-17-3w. Checkerboard 4,820 ft.; drlg. 5,047 ft.

Helmerich & Payne et al No. 1 Ruck, C NE SE sec. 9-19-2w. Rig.

Muskogee County

A. D. Spears et al No. 1 Robbins, NW cor. sec. 20-15-20. Turkey Mt. sd. 1,677-84 ft.; Arbuckle 1,710 ft.; T.D. 1,811 ft.; S.S.O.; S.D.

Okfuskee County

Harvey Oil Co. No. 1 Stewart, NE cor. sec. 28-10-9. Set 10-in. csg. at 61 ft.; S.D.

Osage County

Norbia Oil Co. No. 1 Osage, NE NE SW sec. 13-23-6. Drlg. 705 ft.

Pawnee County

Forest Dev. Corp. No. 1 Greisel, C NW NE sec. 21-21-5. Osw. 2,842 ft.; drlg. 3,020 ft.

Forest Dev. Corp. No. 1 Markham, SW NE SE sec. 10-21-5e. Rig.

Pittsburg County

Okla. Dist. Oil Co. No. 1 Beeler, NE NE SW sec. 7-7-14. Union Valley 4,943 ft.; Cromwell 4,968 ft.; drlg. 5,033 ft.

Pontotoc County

Caloma Oil Corp. No. 1 Brents, SE NE SW sec. 4-1-6. S.D. 503 ft.

E. H. Moore et al No. 1 Muse, SW NE SE sec. 33-2n-7. S.S.O. 4,150-55 ft.; cd. 4,155-75 ft.; rec. 2-in. dry lime, 8-in. saturation; Syl. 4,181 ft.; T.D. 4,183 ft.; to acidize.

L. K. Sandback et al No. 1 Whittaker, NW NE SE sec. 31-4-6. Cellar.

Pottawatomie County

Champlin Ref. Co. No. 1 Buckler, SE NE NE sec. 7-6n-4e. Rig.

Mid-Continent Pet. Corp. No. 1 Logan, NE NE SE sec. 31-11-5. Shot off drill pipe at 3,252 ft.; P.B. 3,194 ft.; set whipstock, 3,256 ft.; ran Eastman survey.

B. H. Rowlett et al No. 1 Burson, SW SW NE sec. 21-9-4e. Loc.

Pushmataha County

Erle Halliburton et al No. 1 Bagwell, SW NE NE sec. 30-3s-15e. T.D. 940 ft.; S.D.

Seminole County

Amerada Pet. Corp. et al No. 1 Fore A, SW cor. sec. 12-9-7. Bldg. rig.

Carter Oil Co. et al No. 1 Simpson, SW SW NE sec. 7-8-8. Syl. 4,335 ft.; Viola 4,410 ft.; Dense 4,445 ft.; Dol. 4,450 ft.; first Wilcox 4,472 ft.; second Wilcox 4,490 ft.; T.D. 4,505 ft.; P.B. 1,476 ft.; 500,000 ft. gas, no oil; flwd. S.W.; D.&A.

J. H. Hudson et al No. 1 Tanyan, SE SE SW sec. 32-10-7. Rig.

R. M. Purcell No. 1 Gilliland, SE SE SW sec. 24-11-7. Loc.

Sinclair Prairie Oil Co. No. 1 Rossanna, NW NW SW sec. 28-10-8. Calvin 1,775 ft.; Senora 2,045 ft.; drlg. 2,725 ft.

Papoose Oil Co. No. 1 Yarber, SW SW NW sec. 15-11-8. Drlg. 900 ft.

A. I. Spears No. 1 Keaton, NW cor. sec. 6-5-8. Rig.

Texas County

Cabot Carbon Co. No. 1 Castro, C NE sec. 19-3n-17ecm. Drlg. 1,215 ft.

Missouri Valley Gas Corp. No. 1 well, C sec. 17-6n-14ecm. D.C.&P.

Washita County

L. P. McWhirter No. 1 fee, SW cor. sec. 34-8-19w. T.D. 1,754 ft. S.D.

SOUTHERN OKLAHOMA

Atoka County

A. J. Sanders No. 3 Redden, SE SW SW sec. 19-1n-15e. T.D. 1,260 ft.; S.D.

Carter County

Helmerich & Payne No. 1 Wolverton, SE NE NW sec. 21-3s-1w. Loc.

Lyle-Wham Dev. Co. No. 1 Jackson, NE SW SW sec. 26-5s-1e. T.D. 857 ft.; S.D. for csg.

Choctaw County

Cooper & Branstetter No. 1 Bell, C NW NE sec. 29-6s-17. T.D. 1,151 ft. (cor.); R.U.S.T.

Comanche County

Frank Scott No. 1-A Kuntz, SE NE SE sec. 21-4-11w. Woodford 896 ft.; Hunton 1,752 ft.; drlg. L. 2,210 ft.

C. V. Morris No. 1 Young, SE NE SE sec. 24-3n-10w. T.D. 822 ft.; U.R.

L. D. Wise No. 1 Cones, SE SE SW sec. 11-1n-10w. T.D. 2,156 ft.; S.D.

Cotton County

Phillips Pet. Co. No. 1 Moore, SW SW NE sec. 6-5s-12w. Canyon 2,131 ft.; T.D. 2,183 ft.; D.&A.

Jefferson County

Buffalo Oil Co. No. 1 Crownover, SE SE NW sec. 21-6s-6w. T.D. 1,148 ft.; fsg.

Dodson, Wells-Pierson No. 1 Key, SE SE NW sec. 6-8s-6w. Pits.

Heenan & Coe et al No. 1 Rose, C SW SW sec. 1-5s-5w. Pits.

Massad & Swansberger No. 1 Barrett, NE cor. SE SE sec. 14-6s-6w. T.D. 1,530 ft.; S.D.

Johnston County

Patton et al No. 1 McCrummens, SW SW NE sec. 16-1s-6e. Drlg. 912 ft.

Love County

W. H. Riddle et al No. 1 Johnson, C SW SE cor. sec. 20-8s-2w. T.D. 4,009 ft.; waiting for tools; will deepen.

Sinclair Prairie Oil Co. No. 1 Stockton, SE SE SW sec. 26-6s-2w. T.D. 8,583 ft.; P.B. 6,927 ft.; drlg. out.

Marshall County

Stuart & Taylor No. 1 Chestnut, NE cor. sec. 23-8s-5e. T.D. 803 ft.; U.R. csg.

Murray County

Power Oil Co. et al No. 1 Lancaster Trust, C SW NE sec. 10-1s-2e. T.D. 3,438 ft.; cond. hole.

J. Ben Russell No. 1 fee, SE SE NW sec. 9-2s-3e. T.D. 1,025 ft.; drlg. up lugs.

Stephens County

Angle & Angle No. 1 Irvine, SW SW NE sec. 24-1n-7w. Loc.

William Angle No. 1 Posey, C NW NW sec. 8-1n-8w. Drlg. sh. 3,050 ft.

Carter Oil Co. No. 1 Harley, C NE NE sec. 24-2s-4w. Top Deese 1,590 ft.; drlg. sh. 2,262 ft.

Jack Cohen No. 1 Pierce, NE NE NW sec. 24-2s-6w. T.D. 400 ft.; S.D. for fuel.

Coline Oil Co. No. 1 Johnson, SW SE NE NE sec. 1-2n-8w. T.D. 6,500 ft.; S.D.O.

H. J. Edwards No. 1 Frederick, SW cor. NE SE NW sec. 31-2n-8w. T.D. 2,800 ft.; to test gas sd. at 2,727-32 ft.

Helmerich & Payne No. 1 Graham, SW SW NE sec. 12-1n-5w. Drlg. sh. and shells 2,950 ft.

B. F. Lundy No. 1 Calmes, NW SW SE sec. 35-1n-4w. R.U.R.

Ed Parson No. 1 Olson, C SW SW sec. 11-2-8w. Tstd. mud, wtr. and S.O.; sl. odor oil and gas 6,856 ft.; T.D. 7,001 ft.; S.D.

Tillman County

Indian Terr. Ill. Oil Co. No. 1 Hatler, C SW NE sec. 32-2s-17w. T.D. 5,169 ft.; P.B. to 4,525 ft.; installing pmpg. equip.

Lynn Oliver No. 1 Rilling, SE SE NW sec. 22-1s-15w. T.D. 1,387 ft.; dry granite wash; S.D.

Shirley Clum et al No. 1 Moricle, NW NW SE sec. 16-4s-14w. T.D. 2,775 ft.; S.D.

KANSAS

Week Ending February 27 (Descriptions are East unless marked otherwise)

Barton County

John Burton No. 1 Wendel, NE cor. sec. 13-19-11w. Drlg. 2,943 ft.

C. L. Carlock et al No. 1 Leibel, SE NE SE sec. 18-18-11w. Set 15-in. csg. 285 ft.

Duwe & Brouk No. 1 Baker, NE SE SW sec. 16-17-13w. 200 ft. W.I.H. at 3,476-78 ft.

Pierson et al No. 1 Hart, SW SW NE sec. 9-20-13w. Abd. loc.

Hendon Drlg. Co. and Morgan & Flynn No. 1 Robenseifer, C NW sec. 7-18-15w. Rng. 15-in. csg. 430 ft.

Indian Terr. Illm. Oil Co. No. 1 Schrapel, SE SE NE sec. 26-20-11w. Topeka 2,623 ft.; fsg. 2,905 ft.

S. L. Parks No. 1 Peach, SE cor. sec. 24-16-14w. U.R. 12-in. 770 ft.

C. L. Price et al No. 1 Kraft, SW NW NE sec. 10-17-11w. Anhy. 665 ft.; drlg. 1,030 ft.

Stanolind O. & G. Co. No. 2 Burmeister, NE NE SW sec. 33-19-11w. Cong. 3,315 ft.; Sil. 3,324 ft.; T.D. 3,342 ft.; acdzd.

E. F. Wakefield et al No. 1 Scheuerman, NE NE SW sec. 31-16-15w. Rig.

Ralph Wixson and Union O. & G. Co. No. 1 Frederick, NW cor. sec. 12-16-13w. M.I.M.

Butler County

Cox & McGinnis No. 1 Faulders, SW SW NE sec. 27-25-3e. Viola 3,120 ft.; drlg. 3,165 ft.

A. M. Landon et al No. 1 McCaig, NE NE SE sec. 13-28-6. Spudded.

C. L. Seibel et al No. 1 Bisagno, SE SE NW sec. 24-25-6e. Loc.

Chase County

Propp et al No. 1 Fromm, SE cor. sec. 29-18-9e. Fsg. 2,440 ft.

Chautauqua County

Brosius et al No. 1 Morris, SW NW SW sec. 6-32-12. Chat 1,795 ft.; L. 2,047 ft.; S.D. 2,165 ft.; H.F.W.

Cowley County

W. M. McKnabb No. 1 Community, C NE NW sec. 14-34-3e. O.W.D.D.; drlg. 3,135 ft.

W. M. McKnabb No. 1 Weldschmidt, SW SW NW sec. 18-34-6e. Drlg. 2,115 ft.

Tom Palmer No. 1-A Lowe, SW SE SE sec. 3-32-5. Loc.

Earl Wakefield et al No. 1 Knapp, SW SW NW sec. 2-34-5e. Chat 3,109 ft. (cor.); at 3,142 ft. bailed 12 B.O. in 15 hrs.; run 6-in. to 3,161 ft.

L. H. Wentz and Amerada Pet. Corp. No. 1 Rush, NW SW SW sec. 36-34-6e. Drlg. 650 ft.

Decatur County

Winkler & Koch No. 1 Vessey, C NW SE sec. 26-3-26w. Topeka 3,415 ft.; K.C. 3,460-3,826 ft.; S.D. 4,007 ft.

Ellis County

Empire O. & R. Co. No. 1 Hall, SE cor. sec. 2-12-17w. Set 10-in. csg. 2,540 ft.; C.O. 2,675 ft.

Ted Kors et al No. 1 Koblitz, SE SW NW sec. 23-12-18w. Pay 3,694-98 ft.; swb. 48 B.O. and swbd. down; T.D. 3,699 ft.; acidized.

Lario O. & G. Co. et al No. 1 Cress, NE cor. sec. 13-11-17w. Whipstock 2,670 ft.; drlg. by at 2,683 ft.

Mazda Oil Co. No. 1 Henderson, SW SW NE sec. 27-11-18w. M.I.M.

Murphy Oil Co. No. 1 Wiesner, SE SE SW sec. 12-14-19w. Anhy. 1,440 ft.; drlg. 3,000 ft.

Noble Pet. Corp. No. 1 O'Laughlin, NW NW SE sec. 13-12-19w. R.U.

Sunray Oil Co. No. 1 Befort, NE cor. sec. 11-14-20w. Anhy. 1,530 ft.; drlg. 3,245 ft.

Earl Wakefield No. 1 Putnam Mortgage Co., SE SE NW sec. 32-15-17w. Loc.

Winkler & Koch No. 1 Jensen, SW SW NE sec. 3-13-18w. S.D. 80 ft.

Finney County

Keith & Olson Drlg. Co. No. 1 Ely, NW NW SW sec. 34-22-29w. Drlg. 2,760 ft.

Grant County

Columbian Fuel Co. No. 1 Gray, C SE sec. 3-29-35w. Drlg. 1,520 ft.

Greenwood County

Hollis et al No. 1 Boone, NW NE NE SW sec. 21-26-12. S.D. 1,130 ft.

Ohio Oil Co. No. 1 Schwab, SE SW SE sec. 9-24-10. Drlg. 2,523 ft.

Harper County

Carter Oil Co. et al No. 1 Seihart Est., C SW NW sec. 4-34-8w. M.I.M.

Harvey County

Harburney Oil Co. No. 1 Schrag, NW NW SE sec. 24-22-3w. S.O. 3,700 ft.; fsg. 3,711 ft.

Haskell County

Kuhn Bros. et al No. 1 Meredith, C SW sec. 10-30-33w. O.W.D.D.; R.U.

Kearney County

J. L. Murphy No. 1 Campbell, NW NW SW sec. 32-25-35w. Anhy. 1,900 ft.; set 7-in. csg. at 2,780 ft.

Kingman County

Shell Pet. Corp. No. 1 McMichael, C W½ W½ SW sec. 12-27-10w. Simpson 4,365 ft.; S.D. 4,396 ft.

Lane County

K. C. Bates No. 1 Bates-Nimocks, C NW NE sec. 16-16-28w. Viola 4,835 ft.; cd. 5,004-06 ft.; no recovery.

Logan County

Rose Spring Drlg. Co. et al No. 1 Wright, C SE SE sec. 12-15-35w. Skid 50 ft. N; R.U.

Lyon County

Young et al No. 1-A Murphy, SE NW NE sec. 32-21-11. Fsg. 1,380 ft.

McPherson County

Bradley Bros. No. 1 Barnholt, SW SW SE sec. 30-20-5w. B.R.

Fred C. Frank et al No. 1 Doles, SE NW NE sec. 12-19-1w. R.U.

Hutchinson O. & G. Co. et al No. 1 Berg, SW SW SE sec. 15-20-3w. U.R. 13-in. csg. 1,685 ft.

Smith et al No. 1 Larson, NW NW SW sec. 35-18-5w. M.I.M.

Wamhoff et al No. 1 Nuse, SE NE SW sec. 18-18-4w. R.U.R.

Meade County

Pacific Midwest Co. No. 1 Rexford, NE SE SW sec. 8-30-29w. R.U.

Mitchell County

Geo. Siedhoff et al No. 1 Greisa, SW SW SE sec. 16-8-10w. S.D. 2,200 ft.

Ness County

Newton Dev. Co. No. 1 Tenny, NW NW SE sec. 19-18-25w. Set 8-in. csg. 3,595 ft.; C.O. 3,600 ft.

Pratt County

H. V. Elwell et al No. 1 Fay, NW NW SE sec. 15-27-14w. Whipstock 2,580 ft.; S.D.

Reno County

Atlantic Ref. Co. No. 1 Page, SE NW NW sec. 19-23-7w. Drlg. 2,300 ft.

Foraker et al No. 1 Hiett, SE SW NE sec. 34-24-4w. Fsg. 3,848 ft.

Helmerick & Payne No. 1 Benson, NE cor. sec. 5-25-6w. Chat 3,663 ft.; drlg. 3,782 ft.

Helmerich & Payne et al No. 1 Evans, NE NE SE sec. 29-24-6w. Rotary rig.

Clyde Pulse No. 1 Payne, SW NW NE sec. 4-22-7w. K.C. 2,907 ft.; H.F.W. 2,957-62 ft.; drlg. 3,100 ft.

Olson Drlg. Co. et al No. 1 Herriman, NW cor. sec. 22-30-33w. Rig.

Westgate-Greenland Oil Co. No. 1 O'Sullivan, SW SW NE sec. 24-23-5w. Rig.

Rice County

Buckley No. 1 Bailey, SW SW NW sec. 19-20-6w. S.D. 1,000 ft.

Carlock et al No. 1 Deweese, SW NW NW sec. 32-20-7w. S.D. 3,675 ft.

Continental Oil Co. et al No. 1 Michekls, NE NE SW sec. 12-18-8w. Set 12-in. csg. 212 ft.; W.O.C.

L. E. Douglass No. 1 Coyne, NE SE SE sec. 24-21-8w. Spudded.

Empire O. & R. Co. No. 1 Banterton, SE SW SE sec. 11-18-8w. Sil. 3,246 ft. (cor.); T.D. 3,270 ft.; acidized.

Hanna et al No. 1 Brothers, SE SE NW sec. 25-20-8w. Set 8-in. csg. 2,409 ft.; C.O.

John Hanna et al No. 1 Fulton, NW NW NE sec. 24-19-6w. Spudded.

T. C. Johnson No. 1 Shubert, SW cor. sec. 9-20-10w. Anhy. 474 ft.; drlg. 476 ft.

Manning & Martin et al No. 1 Mathes, SE SW NE sec. 27-21-8w. R.U.R.

Roy Ramsey et al No. 1 Malone, NW NW NE sec. 1-20-10w. R.U.

Union Oil & Refining Co. et al No. 1 Baker, SW SW NE sec. 31-20-6w. M.I.M.

W. E. Witt et al No. 1 Fair, NW SE SE sec. 4-22-8w. Rig.

Rooks County

Basin Oil Co. No. 1 Baxa, NE cor. sec. 23-9-17w. S.D. 2,000 ft.

Buckner & Schoff No. 1 McConnel, NE cor. sec. 34-6s-18w. S.D. 2,645 ft.

Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. T.D. 3,301 ft.

Jones Bros. No. 1 Wiss, NW cor. sec. 8-10-18w. Spudded.

J. H. Lester No. 1 Methene, SE SE NE sec. 29-10-20w. Fsg. 3,422 ft.

Snowden & McSweeney No. 1 Hindman, C E½ NW sec. 35-7s-17w. H.F.W. 3,180 ft., T.D.; P.B. to 3,123½ ft.

Rush County

S. A. Murphy et al No. 1 Roth, NW NW SW sec. 21-16-18w. R.U.

Russell County

Empire O. & R. Co. No. 1 Vaughn, SW cor. sec. 17-14-14w. Anhy. 835 ft.; drlg. 2,490 ft.

Equity Gas Co. No. 1 Harbaugh, NW NE SW sec. 19-13-12w. Set 10-in. csg. 780 ft. W.O.C.

Getty, Inc., No. 1 Baxter, SE SE NE sec. 8-15-15w. Anhy. 892 ft.; Topeka 2,795 ft.; K.C. 3,080 ft.; Sil. 3,340 ft.; H.F.W. 3,360-65 ft.; D.&A.

Shields et al No. 1 Gross, NW NW SE sec. 5-15-13w. Loc.

Saline County

Ryan Consd. No. 1 Wuerth, SW SW NW sec. 28-14-2w. Fsg. 1,870 ft.

Sedgwick County

Cameron et al No. 1 Smith, SW SE SE sec. 13-27-2e. Drlg. 2,115 ft.

Roxana Drlg. Co. et al No. 1 Woodman, SW NW SW sec. 26-26-1w. Rig.

E. M. Swearer et al No. 1 Thome, SW SW NW sec. 19-28-1w. R.U.R.

Scott County

C. R. Blackman et al No. 1 Nolan, NW NW NE sec. 13-19-33w. Abd. loc.

Stafford County

Empire Ref. Co. et al No. 1 Jordon, SW SW NW sec. 15-25-14w. Simp. 4,210 ft.; Sil. 4,252 ft.; T.D. 4,267 ft.; sulfur wtr.; P.B. 3,943 ft.; shot; swb. 65 B.O. and 15 B.W. in 3 hrs.; swbg.

Empire O. & R. Co. No. 1 O'Connor, NE cor. sec. 17-24-15w. Sil. 4,083 ft.; sulfur odor; S.G. 4,119-29 ft.; R.U.S.T.

Rose Spring Drlg. Co. et al No. 1 Gray, NW cor. sec. 11-24-13w. M.I.M.

J. E. Trigg and Vernon Oil & Gas Co. No. 1 Andrea, SE cor. sec. 4-23-12w. B.R.R.

Sumner County

Graham et al No. 1 Dawson, NW NW NW sec. 4-33-2w. Fsg. 3,755 ft.

Olson Drlg. Co. et al No. 1 Barr, SE cor. sec. 8-34-2w. B.R.R.

Orcott & Stewart No. 1 Newton, SE cor. sec. 21-30-2. O.W.W.D.; S.D. 930 ft.

E. B. Shawver et al No. 1 Bryan, C W½ W½ SW sec. 36-30-2w. B.R.R.

C. H. Westfall et al No. 1 Rogers, SW NW SW sec. 35-31-2w. Drlg. 2,375 ft.

Trego County

Black Gold Oil Co. No. 1 Allman, C SW SW sec. 34-14-21w. Drlg. 2,300 ft.

Central Commercial Oil Co. No. 1 Burkett, C SW sec. 15-11-22w. O.W.D.D.; drlg. 4,210 ft.

Woodson County

Harper et al No. 1 Weidle, SE SE NE sec. 10-24-14. Spudded.

Reamer No. 1 Corn, NE cor. sec. 31-26-15 Drlg. 1,820 ft.

C. L. Sheedy No. 2 Fulhage, C S½ NW SE sec. 27-25-14. R.U.M.

ARKANSAS

Clark County

Pat Carlin et al No. 1 Bierne, NE SE NE sec. 22-10s-12w. M.I.M.

John G. Wooten No. 1 Z. T. Sparkman, sec. 1-11-20. 7-in. cmtd. 560 ft.; arg. test.

Cleveland County

J. R. Lockhart No. 1 Ida Robertson, SE sec. 36-10-11w. Drlg. 3,340 ft.

Grant County

Wallace & Staples No. 1 W. F. Davis, SE SE NW sec. 23-6-15. Jnkd. first hole; T.D. 2,580 ft.; skidded rig 150 ft. SE; Drlg. 2,200 ft. in 2nd hole.

Hempstead County

Birdwell et al No. 1 Duckett, SW NW SW sec. 24-13-24. S.D. 125 ft.; M.I.R.

Easton et. al. No. 2 Conway-Tiller, SW SW sec. 34-12-27. D.&A.; T.D. 3,246 ft.

Root Pet. Co. No. 1 D. F. Jones, 330 ft. S and W, NE SW NE sec. 16-13-23. D.&A.; T.D. 4,513 ft.

Root Pet. Co. No. 1 Lucey, E. Drake, SE SE NW sec. 24-14s-24w. Cg. 2,393 ft.

Shephert & Todd et al No. 1 Smith, NW SW SE sec. 11-11-25. R.U.

Lafayette County

Kamon & Neely No. 1 Barker, sec. 26-19-24, D.&A.; T.D. 4,450 ft.

Carl B. King Drlg. Co. No. 1 Eben H. Woolcott, NE cor. sec. 36-19-26. Loc.

A. M. Neeley No. 1 Meek, NE NE NW sec. 35-19-25. Drlg. 3,012 ft.

Little River County

M. E. Sanderson No. 1 Pinning, sec. 6-13-30. S.D. 500 ft.

Joe Strahan No. 1 Dierks, SW SE sec. 21-12-28. Drlg. 1,979 ft.

Miller County

Erwin & Leach et al No. 1 M.&P. Bank, NE SE SE sec. 18-15-26. Loc.

Nevada County

Benedum & Trees No. 1 Block, NE NE SE sec. 9-14-20. Cg. 4,230 ft.

Benedum & Trees No. 2 C. C. Fincher, SW SW NE sec. 10-14-20. T.D. 1,260 ft.; W.O.S.R.

Benedum & Trees No. 3 C. C. Fincher, sec. 10-14-20. Cg. 2,160 ft.

Benedum & Trees No. 4 C. C. Fincher, SE SW NE sec. 10-14-20.

Benedum & Trees No. 4 Grove, SE SW NW sec. 10-14-20. Drk.

Benedum & Trees No. 5 Grove, NE SW NW sec. 10-14-20. Comp.; pump 320 B.P.D.; 50 bbls. water; T.D. 2,138 ft.

Benedum & Trees No. 6 Grove, SW NE NW sec. 10-14-20. T.D. 1,253 ft.; H.F.O.; W.O.S.R.

Benedum & Trees No. 7 Grove, NW SW NW sec. 10-14-20. Drk.

Benedum & Trees No. 8 Grove, SW SW NW sec. 10-14-20. Drk.

Benedum & Trees No. 9 Grove, NE NE SW sec. 10-14-20. Drk.

Benedum & Trees No. 1 Mary Jackson, NE NW NE sec. 9-14-20. 7-in. cmtd. 2,131 ft.; T.D. 2,134 ft.; W.O.C.S.

Berry Asphalt Co. No. 1 J. Haynie, NE NE SE sec. 6-14-20. Loc.

J. C. Buckbee No. 1 Wortham, SW SW NW sec. 29-13-21. T.D. 2,340 ft.; T.A.

John R. Lewis No. 1 W. Haynie, SW SW NE sec. 5-14-20. Est. 15,000,000 ft. gas; 200 bbls. oil; S.D. 1,169 ft.; W.O.

Walter Lowd No. 1 T. S. Grayson, SW SW SE sec. 12-14-20. Drk.

W. E. Stewart No. 1 Mendenhall, cen. SE NW NE sec. 1-14-20. 10-in. cmt. 104 ft.; R.U.R.

Steel & Warmack No. 1 Wm. Haynil, SE SE NW sec. 6-14-21. T.D. 1,183 ft.; W. O.S.R.

G. H. Vaughn No. 1 Christopher, SW SW SE sec. 3-14-20. Drk.

Ouachita County

Lion Oil Co. No. 1 Blanch Levey, C W½ SW NW sec. 21-15-15. Drlg. 4,970 ft.

J. D. Reynolds No. 2 P. C. Grayson, Lot 4, Blk. 10, Stephens Sur., sec. 21-15-19. Bailing; T.D. 1,508 ft.

Pope County

Arkansas-La. No. 1 Smith, sec. 10-8n-21w. Drlg. 4,522 ft.

Sevier County

C. J. Benkley No. 1 Luther Tabler, NW NE SE sec. 14-10s-29w. R.U.

Union County

Dietrich et al No. 1 Aaronson, NE SW NE sec. 3-18-16. R.U. and W.O.

Lion Oil No. 1 Morgan, sec. 18-18-17. O.W. D.D. (Formerly Phillips Pet. Co.) Prep. core; T.D. 4,440 ft.

Fenn-Ark. Corp No. 1 W. N. Raulston, 330 ft. S and E, NW NW SE sec. 12-17-14. Cg. oil sd.; arg. set csg.; 7-in. cmtd. 2,980 ft.; T.D. 2,983 ft.; W.O.C.S.

S. H. A. Oil Corp. No. 1 H. D. Warren, NE SW SW sec. 10-17-14. Drlg. out cmt. 3,342 ft. and W.O.S.R.; T.D. 3,342 ft.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo-Bossier

J. W. Anson No. 1 N. S. Spearman, NW SE sec. 14-23-15. T.D. 2,460 ft.; S.D. W.O.

J. Edw. Jones No. 1-B Sharp, 297 ft. N, 151 ft. W, C sec. 4-23-16. T.D. 6,045 ft.; perf. and tstg.

Lion Oil Rfg. No. 1 Holm, NW SE SE sec. 9-23-15. Loc.

Lyons & Neely No. 1 Noel, SE cor. sec. 8-23-15. Rg. 6,086 ft.

Lyons & Neely No. 2 Noel, SW SE SE sec. 8-23-15. Drlg. 4,277 ft.

Magnolia Pet. Co. No. 11-A Caddo Lvy. Bd., SW cor. sec. 21-23-16. Drlg. 5,455 ft.

R. W. Norton No. 1 L. C. Harden, NE sec. 20-23-16. Drlg. 3,776 ft.

R. W. Norton No. 1 Payne, C SE SE sec. 27-23-16. Cg. 8,316 ft.

R. W. Norton No. 3 Starke, 660 S and W C sec. 16-23-16. Drlg. 5,687 ft.

Standard Oil of La. No. 1 Armistead Comm., SW SW SE sec. 4-23-16. Drlg. 2,490 ft.

Standard Oil of La. No. 2 Armistead Comm., SE SE SW sec. 4-23-16. Drlg. 3,580 ft.

Standard Oil No. 2 J. R. Harden, NE NW NE sec. 16-23-16. Drlg. 5,636 ft.

Standard of La. No. 1 Emma J. Parker, NE SE NW sec. 9-23-16. Cg. 5,919 ft.

United Gas No. 6 fee 574, SW NE NW sec. 16-23-16. Loc.

United Gas No. 1-A Mitchell, 656 ft. N and W, SE cor. sec. 17-23-16. Drlg. 4,100 ft.

United Gas Co. No. 4 W. M. Mitchell, NW cor. sec. 20-23-16. Drlg. 4,610 ft.

United Gas Co. No. 27 Rodessa O. & L. Co., NE NW sec. 15-23-16. Drlg. 5,906 ft.

United Gas No. 5 Young, NW sec. 27-23-16. R.U.

N. LOUISIANA WILDCATS

Bienville Parish

Lide & Greer No. 1 Smelley, 220 ft. N, 180 ft. W, SE SW NE sec. 13-16-5. T.D. 7,240 ft.; tstg.; 50,000,000 ft. gas.

McDowell et al No. 1 Locke, NE cor. sec 9-15-10. Drlg. 2,284 ft.

Seaboard No. 1 McGee, 660 ft. N and E, C sec. 3-16-3. T.D. 8,017 ft.; tstg.; 70,000,000 ft. gas.

Bossier Parish

Ark.-La. No. 1 W. H. Davis, 660 ft. S, 1,270 ft. E, NW NE NW sec. 8-17-11 Comp.; 33,320,000 ft. gas; reacidized; T.D. 4,450 ft.

Arkansas-La. No. 1 R. Hardeman, SE cor. sec. 6-17-11. Drlg. 2,961 ft.

Arkansas-La. No. 1 Tom Wilson, SW sec. 8-17-11. Drk.

La. Pet. Corp. et al No. 1 Edwards Est., NW SW sec. 5-17-11. Drlg. 5,060 ft.

Haynes Drlg. Co. No. 1 A. J. Murff, NE SE sec. 35-17-12. Drlg. 1,700 ft.

Tidwell et al No. 1 Natting, sec. 15-22-14. T.D. 2,954 ft.; S.D.

Triangle Drlg. Co. No. 1-I Skannal, NE cor. sec. 22-17-12. Cg. 5,162-70 ft.; prep. test again.

Triangle No. 2 Ross Unit, NW SW NW sec. 23-17-12. Drk.

Triangle No. 1-H Skannal, SE SW SW sec. 23-17-12. Drlg. 3,860 ft.

United Gas No. 1 H. G. Freeman, SE cor. sec. 15-17-12. Reperf.; tstg.; T.D. 5,166 ft.

United Gas No. 1 Henderson, NE cor. sec. 36-17-12. Drlg. 2,691 ft.

United Gas No. 1-H A. C. Skannal, NE SE sec. 26-17-12. 7-in. cmtd. 5,130 ft.; tstg.; T.D. 5,144 ft.

Caddo Parish

Paul Cooper No. 1 Rodgers, NW SW SW sec. 11-20-15. T.D. 2,215 ft.; W.O.S.R.

W. D. Chew No. 3 U. S. Govt., NW sec. 5-20-16. 8-in. cmtd. 942 ft.; W.O.C.S.

C. C. Chews No. 3 Pender, SW NW SW sec. 11-20-15. R.U.

Custer Oil Co. No. 1 Wemple, N½ NW sec. 14-20-15. S.D. 1,650 ft.; rig rep.

DeMaggo et al No. 1 Huckaby, SE NE SE sec. 26-22-16. T.D. 1,137 ft.; tstd. dry; arg. D.D.

Gulf Ref. Co. No. 1 E. P. Hatcher, 660 ft. N and E, SW cor. SE¼ sec. 11-17-15. Drlg. 8,833 ft.

B. F. Laney No. 1 Taylor, SW SE SW sec. 17-21-14. S.D. 904 ft.

F. L. Luckett No. 1 Connell, SW NE sec. 10-20-15. 6-in. cmtd. 2,174 ft.; T.D. 2,208 ft.; blg. to test.

Robson Oil Properties, Inc., No. 1 Cupples,

NE sec. 24-16-13 (formerly Falcon Oil Co.). R.U. to D.D.; T.D. 4,000 ft.

Rodgers et al No. 1 Thompson, NW SW SW sec. 11-20-15. 6-in. cmtd. 2,178 ft.; W.O.C.S.

Stanolind No. 116 Dillon, SE SE sec. 14-21-15. Acid; T.D. 1,697 ft.; S.D.

Stanolind No. 117 Dillon, NE SE sec. 14-21-15. 7-in. cmtd. 1,476 ft.; W.O.C.S.

J. J. Thompson No. 1 Gamm, NE SW NW sec. 35-21-15. Tstg. S.W.; S.D.; T.D. 2,225 ft.

Claiborne Parish

Lisbon Oil Co. No. 1 J. W. Burgess, NE SE NE sec. 3-20-5w. Drlg. 1,750 ft.

Lyons & Neely No. 1 H. E. Patton, NE NW SW sec. 36-21-5w. Drlg. 1,180 ft.

Max Hirsch et al No. 1 C. O. Ferguson, 2,640 ft. N, 1,000 ft. E. SW cor. sec. 29-22-6w. Cg. 5,906 ft.

Ray P. Oden No. 1 W. H. Patton, SW SE SE sec. 36-21-5w. Drlg. 2,377 ft.

Red Iron Drlg. Co. No. 1 H. E Patton, S½ SW NE sec. 36-21-5w. 10-in. cmtd. 849 ft.; W.O.C.S.

Standard Oil of La. No. 1 Baker, 660 S&E NW sec. 27-19n-7w. Drlg. 1,670 ft.

De Soto Parish

Benedum & Trees No. 1 Clifton, NE NW sec. 33-13-12. Drlg. 1,600 ft.

Chamberlin et al No. 1 Lanier, 280 ft. N and E, SW NE sec. 29-11-11. R.U.

Fite No. 1 Ramsey, NW sec. 36-11-11. T.D. 2,800 ft.; rig repair.

Gulf Ref. Co. No. 36-A Jenkins, SE cor. sec. 2-12-12. Arg. set 7-in.; T.D. 2,339 ft.

Peral Oil Co. No. 1 Joyner, SE NW SW **sec. 28-11-12. Cmtd. 8-in. 2,885 ft.; T.D.** 2,897 ft.; prep. tstg.

Rio Rajo Oil Co. No. 7 Prudhomme, SE cor. sec. 20-12-11. Drlg. 2,118 ft.

Stillers et al No. 2 Jenkins, 330 ft. S and W, NE SE NW sec. 35-13-12. S.D. 2,503 ft.; fuel.

R. M. Sundby No. 1 A. P. Garland, NW SW sec. 7-14-14. Rg. 3,050 ft.

Grant Parish

Tri State Lse. & Dev. Co. No. 1 Eden-born Est., NE SE SE sec. 13-7-4w. 10-in. cmtd. 700 ft.; W.O.C.S.

LaSalle Parish

Lee Oil Corp. No. 1 Tullos, 150 ft. S and W NE NE sec. 26-10-1e. T.D. 1,529 ft.; prep, run csg.

Placid Oil Co. No. 3 La. Cen. Lbr. Co., NE SE sec. 8-10-4e. D.&A.; T.D. 1,811 ft.

Urania O. & G. Co. No. 1 Urania, NW sec. 7-10-2. T.D. 1,403 ft.; rng. csg.

Natchitoches Parish

Natchitoches Oil Co. No. 1 Simpson, sec. 12-7-7. Junked and abnd.; T.D. 2,509 ft.

Ouachita Parish

United Gas No. 2 Morris, SE sec. 36-19-3e. Loc.

United Carbon No. 7 Neston, NE cor. sec. 32-19-4e. Cmt. 6-in. 2,187 ft.; W.O.C.S.

Red River Parish

Gulf No. 39 E. T. Robinson, NW cor. sec. 25-13-11. Drlg.

Perla Oil Co. No. 1 DeLong, 330 ft. S and E. C sec. 23-12-10. Fsg. 2,300 ft.

Richland Parish

Gulf Ref. Co. No. 15 R. R. Rhymes et al, sec. 32-17-6e. Drlg. 9,572 ft.

Sabine Parish

Blue Lake Oil Co. No. 1 Delaney & Wheless, NW SW sec. 31-9-13. Hole abnd.; T.D. 2,037 ft.

Earl F. Fox No. 1 Blankenship, NE SE NW sec. 13-9-12. T.D. 3,305 ft.; D.S. test dry; S.D. W.O.

Kirk-Green-Way Inc. No. 1 Whitney Corp., NW NE sec. 8-9-13. 13-in. 297 ft.; W.O.C.S.

Posey Sisters Oil Co. No. 3 Burkett, NE cor. sec. 10-9-13. D.&A.; T.D. 3,234 ft.

Power Oil Co. No. 1 Belton, 990 W. 330 S NE sec. 31-9-13w. Drlg. 1,264 ft.

Prod. O. & G. Co. No. 1 Lynch, SW NE SW sec. 29-9-13. Pumped off; acid.; T.D. 1,608 ft.

Willis & Dowden No. 1 Lynch, SW NE SW sec. 29-9-13. T.D. 1,608 ft.; arg. tst.

Union Parish

So. Carbon Co. No. 17 Grayling, SW cor. sec. 21-21-4e. R.U.

So. Carbon No. 18 Grayling, SE cor. sec. 20-21-4e. Loc.

Webster Parish

Ohio Oil Co. No. 1 S. P. D. Coyle, NW SE SW sec. 23-21-10. Drlg. 4,320 ft.

Ohio Oil Co. No. 2 R. M. Coyle, SE sec. 22-21-10. Drk.

Ohio Oil Co. No. 2 A. H. Gray Acct. No. 2. NW sec. 26-21-10. Drlg. 5,122 ft.

Ohio Oil Co. No. 2 A. J. Hodges, NE NW SW sec. 23-21-10. Drlg. 4,646 ft.

Red Hawk Oil Co. No. 1 Mayfield, sec. 9-23-9. Junked and abnd.; T.D. 2,802 ft.

L. R. Skidmore No. 1 Barnett, NE NW SW sec. 29-17-9. Drlg. 2,285 ft.

Standard Oil Co. of La. No. 1 E. Firdeck-er, 1,320 ft. E, 1,316 ft. S, NW cor. sec. 2-17n-9w. Cg. 7,040 ft.; shows gas.

Tide Water No. 1 L. Pipes, NE SE sec. 10-18-10. Dry and abnd.; T.D. 6,784 ft.

United Gas No. 2 Davis, 660 ft. S and E. NW cor. sec. 23-21-10. T.D. 8,424 ft.; milling on bit cones.

United Gas No. 1 Mixon, SE SW sec. 23-21-10. T.D. 8,231 ft.; W.O.

Woodley Pet. Co. No. 4-B Gray, NE NE sec. 27-21-10. Drlg. 5,290 ft.

SOUTH LOUISIANA FIELDS

Ansela Butte—St. Martin Parish

Stanolind O. & G. Co. No. 1 Patin, sec. 46-9s-5e. 13⅜-in. csg. 1,514 ft.; T.D. 5,430 ft. (cor.); P.B. 2,658 ft.; drlg. sd. 5,537 ft.

Bayou Bouillion—Iberville Parish

S. C. Yingling No. 1-A State, sec. 13-9s-8e. T.D. 3,272 ft.; oil sd.; rng. csg.; P.B. 1,550 ft.

Bayou Mallett—Acadia Parish

Superior Oil Prod. Co. No. 5 Breelley, sec. 52-7s-1e. Drlg. sd. and sh. 2,950 ft.

Black Bayou—Cameron Parish

Shell Pet. Corp. No. 37 Watkins, sec. 8-12s-12w. R.U.

Cankton—St. Landry Parish

Superior Oil Prod. Co. No. 1 Brasseaux, sec 24-8s-3w. R.U.

Caillou Island—Terrebonne Parish

Texas Co. No. 28 State, sec. 18-23s-20e. T.D. 4,584 ft.; 7⅝-in. csg. 4,584 ft.; I.P. 984 B.P.D. through ¼-in. ck.

Texas Co. No. 33 State, sec. 20-23s-20e. T.D. 4,830 ft.; P.B. and strkd.; T.D. 4,358 ft.; 7⅝-in. csg. 3,865 ft.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 2 Laws Realty Co., sec. 30-13s-10e. T.D. 7,194 ft.; 7,-in. csg. 7,180 ft.; I.P. 323 B.P.D. through 12/64-in. ck.

Pan American Prod. Co. No. 3 Laws Realty Co., sec. 25-13s-9e. Drk.

Pan American Prod. Co. No. 1 South Coast Corp., sec. 30-13s-10e. S.D. 6,934 ft.; high wtr.

Choctaw—Iberville Parish

Standard Oil Co. No. 9 Myrtle Grove, sec. 53-9s-11e. T.D. 3,455 ft.; fsg.

Cameron Meadows—Cameron Parish

Burton Sutton Oil Co. No. 16 Sch. Ld., sec. 16-14s-13w. Set 10¾-in. csg.; T.D. 4,851 ft.; P.B. 3,650 ft.; W.O.C.

Burton Sutton Oil Co. No. 18 School Ld., sec. 16-14s-13w. Drk.

Magnolia Pet. Co. No. 19 Cameron Meadows, sec. 16-14s-13w. T.D. 4,714 ft.; recvd. 2,-500 ft. of P.L.O. on D.S.T.; 9⅝-in. csg. 4,694 ft.; P.B. 4,708 ft.; blew out, caught fire, bridged, moved in new rig.

Darrow—Ascension Parish

Humble O. & R. Co. No. 4 Community, sec. 33-2e. Drk.

Dog Lake—Terrebonne Parish

Texas Co. No. 4 State, sec. 5-22s-16e. T.D. 5,342 ft.; sdtrkd. at 5,185 ft.; T.D. 6,147 ft.; P.B. and sdtrkd.; drlg. sdy. L. 5,930 ft.

Four Isle—Terre Bonne Parish

Texas Co. No. 8 State. Drlg. sd. 8,461 ft.

Fausse Point—Iberia Parish

Texas Co. No. 2 State, sec. 35-11s-8e. 7-in. csg. 6,444 ft.; cd. salt 7,151-57 ft.; 1,021 ft. of 4½-in. csg. 7,157 ft.; perf. csg. 6,303-6,553 ft.; flowing by heads 12 bbls. of oil every 2 hrs.

Garden Island—Plaquemines Parish

Texas Co. No. 23 State, sec. 37-23s-32e. 18⅝-in. csg. 541 ft.; drlg. sh. 5,281 ft.

Gillis—Calcasieu Parish

Fohs Oil Co. No. 17 O. H. Castle, sec. 14-9s-8w. Drlg. sh. 6,408 ft.

Fohs Oil Co. No. 1 First Natl. Bank, sec. 13-9s-8w. R.U.

Texas Co. No. 12 Nickerson, sec. 1-9s-8w. R.U.

Union Sulphur Co. No. 12 Barbe, sec. 1-9s-8w. Drlg. sd. rock 9,019 ft.

Union Sulphur Co. No. 13 Barbe, sec. 1-9s-8w. Drlg. sh. and L. 3,597 ft.

Union Sulphur Co. No. 14 Barbe, sec. 1-9s-8w. Loc.

Union Sulphur Co. No. 1 McIver, sec. 14-9s-8w. Cored oil sd. 5,421-31 ft.; 7-in. csg. 5,421 ft.; tested dry gas, shut in.

Union Sulphur Co. No. 12 Powell Lbr. Co., sec. 12-9s-8w. R.U.

Union Sulphur Co. No. 13 State, sec. 13-9s-8w. Abd. location.

Union Sulphur Co. No. 15 State, sec. 12-9s-8w. Abd. location.

Hackberry—Cameron Parish

W. T. Burton No. 1 Rosella Vincent, sec. 22-12s-10w. Drlg. sh. 1,258 ft.

Gulf Oil Corp. No. 23 Erwin, sec. 12-12s-10w. R.U.

Independent Oil Co. No. 1 Sanner, sec. 29-12s-10w. T.D. 1,775 ft.; 5-in. csg. 1,-775 ft.

Stanolind O. & G. Co. No. 6 Carter, sec. 22-12s-10w. Drlg. sh. 3,030 ft.

Stanolind Oil & Gas Co. No. 1 J. H. Duhon, sec. 27-12s-10w. Cg. sd. 3,979 ft.

Stanolind O. & G. Co. No. 25-B Gulf Land fee, sec. 15-12s-10w. Drk.

Stanolind O. & G. Co. No. 1 M. J. Muller, sec. 23-12s-10w. 7⅝-in. csg. 4,617 ft.; drlg. sh. and shells 5,158 ft.

Stanolind O. & G. Co. No. 18 School Land, sec. 16-12s-10w. Drlg. sh. and shells 1,785 ft.

Superior Oil Prod. Co. No. 1 C. Hebert Estate, sec. 35-12s-10w. Drlg. sh. 6,363 ft.

Sutton Joint Interest No. 1 Ellender, sec. 22-12s-10w. R.U.

Texas Co. No. 20 State, sec. 12-12s-10w. Drlg. sh. 7,825 ft.

Union Sulphur Co. No. 42 Walkins, sec. 13-12s-10w. T.D. 2,990 ft.; 7-in. csg. 2,-981 ft.; swabbed dry, pulling liner.

Iowa—Jefferson-Davis Parish

Shell Pet. Corp. No. 22 Heyd, sec. 13-9s-7w. R.U.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 7 Banta, sec. 40-13s-9e. T.D. 6,646 ft.; 7-in. csg. 6,635 ft.; I.P. 830 B.P.D through ¼-in. ck.

A. U. Morrison No. 1 Matilda Plantation, sec. 70-13s-9e. T.D. 7,269 ft.; tested S.W. on D.S.T.; abd.

Teche Oil Co. No. 1 Eaves, sec. 70-13s-9e. Drlg. sh. 6,236 ft.

Jennings—Acadia Parish

A. C. Glassell et al No. 1 J. Trusel, sec. 42-9s-2w. Drlg. sd. 4,812 ft.

Lake City Oil Co. No. 2 Jennings Synd., sec. 46-9s-2w. T.D. 2,990 ft.; fsg.

T. C. Markly No. 1 Gourney, sec. 43-9s-2w. S.D. 4,196 ft.

Shell Pet. Corp. No. 2 Community, sec. 40-9s-2w. T.D. 7,185 ft.; 7-in. csg. 7,181 ft.; W.O.C.

Stanolind O. & G. Co. No. 18 Houssiere-Latrielle, sec. 47-9s-2w. T.D. 5,458 ft.; 8⅝-in. csg. 5,358 ft.

Superior Oil Prod. Co. No. 1 Iowa-Jennings, sec. 41-9s-2w. Drlg. sh. 6,287 ft.

Superior Oil Prod. Co. No. 2 Leckcit, sec. 42-9s-2w. Drlg. sdy. sh. 6,353 ft.

Lafitte—Jefferson Parish

Texas Co. No. 6 Lafitte, sec. 20-17s-24e. T.D. 1,771 ft.; lost returns; moved drlg. barge 135 ft. N of first hole; drlg. sh. and L. 6,866 ft.

Texas Co. No. 8 Rigolettes, sec. 39-17s-24e. Drlg. sh. and L. 8,342 ft.

Texas Co. No. 1 State-Bayou Norman, sec. 28-17s-24e. Loc.

Lake Barre—Terrebonne Parish

Texas Co. No. 37 Lake Barre-State. Drlg. sh. and sd. 10,502 ft.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp. No. 6 LaFourche, sec. 11-8s-25e. Drlg. sd. 5,600 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 15 State, sec. 17-23s-18e. Drlg. sd. 6,944 ft. No report.

Leesville—Calcasieu Parish

Carter-Michael No. 1 E. S. Bernard, sec 26-21s-22e. Abd. 6,265 ft.

Gulf Oil Corp. No. 1-A City of New Orleans, sec. 35-21s-22e. Drlg. sd. and L. 5,766 ft.

Gulf Oil Corp. No. 4 City of New Orleans sec. 25-21s-22e. T.D. 5,945 ft.; P.B. 1,078 ft.; T.D. 3,691 ft.; swabbing.

Texas Co. No. 60 Leesville, sec. 27-21s-22e. T.D. 4,203 ft.; 7⅝-in. csg. 3,130 ft.; comp. for gas well.

Texas Co. No. 62 Leesville, sec. 29-17s-24e. Drlg. sh. and L. 3,197 ft.

New Iberia—Iberia Parish

Wm. Heilis No. 6 Bernard, sec. 54-12s-7e. T.D. 4,562 ft.; 7-in. csg. 4,466 ft.; I.P. 580 B.P.D. through ¼-in. ck.

Wm. Heilis No. 7 Bernard, sec. 54-12s-7e. Drlg. sd. and gravel 174 ft.

Wm. Heilis No. 4 Boliver, sec. 56-12s-7e. R.U.

Wm. Heilis No. 4 Bullock & Burke, sec. 25-12s-7e. T.D. 4,505 ft.; P.B. and sdtrk.; T.D. 4,401 ft.; P.B. and strkd.; drlg sh. and L. 3,696 ft.

Wm. Heilis No. 3 Schwing, sec. 57-12s-7e. Drlg. sd. 830 ft.

Texas Co. No. 3 Bryant, sec. 25-12s-7e. Loc.

Texas Co. No. 1 Clementine, sec. 25-13s-1e. T.D. 6,731 ft.; P.B. 5,997 ft.; perf. csg. 5,987-96 ft.; swabbing.

Texas Co. No. 1 Dohoe, sec. 26-12s-7e. Drlg. sh. 67 ft.

Texas Co. No. 4-B Hanzen, sec. 54-12s-1e. T.D. 4,755 ft.; 7-in. csg. 4,665 ft.; I.P. 607 B.P.D. through ¼-in. ck.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 3 Cormier, sec. 4-6s-5e. Drlg. sh. and L. 6,496 ft.

Roanoke—Jefferson Davis Parish

Shell Pet. Corp. No. 6 Kratzer, sec. 13-9s-4w. 10¾-in. csg. 2,454 ft.; T.D. 9,843 ft.; P.B. 8,881 ft.; swabbed S.W.

Sorrento—Ascension Parish

Pan American Prod. Co. No. 8 United Land, sec. 22-10s-4e. Drlg. sh. 1,510 ft.

Sorrento Oil Co. No. 1 Bernard, sec. 9-13s-14e. S.D. 6,262 ft.

Tri-State Dev. Co. No. 1 Duplessis, sec. 69-10s-2e. Drk.

Starks—Calcasieu Parish

J. R. Turnbull No. 1 Industrial Lbr. Co., sec. 20-9s-12w. S.D. 6,433 ft.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 840 fee, sec. 29-9s-10w. R.U.

Union Sulphur Co. No. 841 fee, sec. 29-9s-8w. T.D. 4,456 ft.; 7-in. csg. 4,436 ft.; P.B. 4,440 ft.; tstd. S.W.; sdtrkng. 4,195-4,210 ft.; drlg. S.W. sd. 4,515 ft.

Union Sulphur Co. No. 842 fee, sec. 29-9s-10w. T.D. 5,475 ft.; fsg.

Union Sulphur Co. No. 843 fee, sec. 30-9s-10w. T.D. 5,147 ft.; P.B. and sdtrk.; T.D. 5,224 ft.; abd.

Tepetate—Acadia Parish

Continental Oil Co. No. 9-A Homeseekers Dev. Co., sec. 29-7s-2w. T.D. 8,323 ft.; P.B. to sdtrk. at 2,354 ft.

Continental Oil Co. No. 1-D Homeseekers Dev. Co., sec. 29-7s-2w. T.D. 8,342 ft.; P.B. to 3,600 ft.; T.D. 7,565 ft.; abd.

Continental Oil Co. No. 2 P. O. Johnson sec. 30-7s-2w. T.D. 8,317 ft.; I.P. 140 B.P.D. through 3/16-in. ck.

Continental Oil Co. No. 1 M. F. Ortego, sec. 30-7s-2w. R.U.

Valentine—Lafourche Parish

Pan American Prod. Co. No. 2 Harang sec. 8-17s-20e. Drlg. sh. 6,868 ft.

Pan American Prod. Co. No. 3 Harang, sec. 8-17s-20e. Drlg. sh. 2,925 ft.

White Castle—Calcasieu Parish

Shell Pet. Corp. No. 4 Shingle, sec. 12-11s-12e. Cg. sh. 8,896 ft.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. S.D. 5,047 ft.; washing to bottom.

Humble O. & R. Co. No. 1 Nordyke, sec. 23. 9⅝-in. csg. 6,843 ft.; drlg. sd. 8,-419 ft.

Allen Parish

Humble O. & R. Co. No. 2 Bel, located in cratered hole, sec. 26-6s-7w. 10¾-in. csg. 165 ft.; T.D. 2,870 ft.; 7-in. csg. 2,-766 ft.; shot well; failed to stop flwg. S.W.; S.D.

Avoyelles Parish

Coastal Mineral Dev., Inc., No. 1 Purdy-Hess, sec. 25-2n-3e. Drk.

George Conover No. 1 Purdy-Hess, sec. 24-2n-3e. Drk.

Frost Oil Co. No. 1 Hines Lumber Co., sec. 3-3n-4e. Drk.

Calcasieu Parish

D. D. Oil Co. No. 1 Lutcher Moore, sec. 11-8s-13w. T.D. 7,010 ft.; S.D.

Wilfred Lahaye No. 1 Bass, sec. 9-10s-12w. S.D. 80 ft.; abd.

Cameron Parish

Magnolia Pet. Co. No. 1 Gray Hrs., sec. 8-15s-14w. Drlg. sh. 6,661 ft.

Pure Oil Co. No. 1 Mallard Bay, sec. 33-13s-3w. 18⅝-in. csg. 1,499 ft.; 9⅝-in. csg. 7,906 ft.; T.D. 10,146 ft.; drill stem stuck; cutting drill pipe.

Southern Sulphur Co. No. 2 State, sec. 33-15s-10w. S.D. 1,410 ft.

Union Sulphur Co. No. 1 J. O. Hebert, sec. 18-12s-8w. Drlg. sh. and L. 5,787 ft.

East Baton Rouge Parish

Cavalier Oil Co. No. 1 Vingnes, sec. 48-8s-2e. T.D. 6,690 ft.; D.S. stuck.

Cavalier Oil Co. No. 1 Young, sec. 62-4s-2w. Abd. loc.

Evangeline Parish

Belle Chenney Springs Oil Co. No. 1 Belle Springs Land Dev. Co., sec. 10-2s-1w. Drlg. sh. 1,800 ft.

Continental Oil Co. No. 1 Pardee Lbr. Co., sec. 18-4s-1w. Drlg. sd. and gravel.

La. Crusader Oil Co. No. 1 Hattie Haas, sec. 2-3s-5e. Drlg. sh. 6,112 ft.

East Feliciana Parish

Barnett Pet. Corp. No. 1 Tullis, sec. 36-2s-1w. Drlg. sd. and sh. 4,630 ft.

Cavalier Oil Co. No. 1 Mells, sec. 58-4s-2w. Drlg. sdy. sh. 4,810 ft. No report.

East Feliciana Oil No. 1 West & Budding, sec. 37-1s-1w. Spudded 15 ft. and S.D.

Iberia Parish

Jefferson Lake Oil Co. No. 414 State Lake Pigneur, Twp. 12s-5e. Top salt 990 ft.; set 10¾-in. csg. 5,095 ft.; coring salt drlg. mud showing gas.

Texas Co. No. 1-B State, Vermilion Bay sec. 16-15s-6e. Abd. 10,622 ft.

Jefferson Parish

Triangle Oil Co. No. 1 Conroe, sec. 115 12s-11e. T.D. 2,461 ft.; drill stem stuck.

Jefferson Davis Parish

H. M. Naylor No. 2 Johnson-Bourdreaux, sec. 39-10s-3w. T.D. 9,008 ft.; abd.

Shell Pet. Corp. No. 1 Joe Sturdivant, sec. 25-10s-4w. 10¾-in. csg. 2,616 ft. **T.D. 9,747 ft.; fsg.**

Stanolind O. & G. Co. No. 1 Calcasieu Natl. Bank, sec. 28-7s-3w. T.D. 9,131 ft.; blew out, hole bridged.

Stanolind O. & G. Co. No. 1 United Life Accident Co., sec. 16-11s-5w. R.U.

Lafourche Parish

Fohs Oil Co. No. 1 State Lake, sec. 61-17s-19e. R.U.

Wm. Heilis No. 1 City of New Orleans, sec. 19-23s-23e. Top salt 7,463 ft.; drlg. sd. 5,943 ft. in strkd. hole.

Livingston Parish

Coastline Oil Co. No. 1 Addison Trust Co., sec. 7-7s-3e. Drk.

Plaquemines Parish

Gulf Oil Corp. No. 1 Bay-Adams, sec. 35-32s-19. S.D. 3,567 ft.

Tide Water Oil Co. No. 2 Manhattan Fruit Co., sec. 34-21s-22e. Cd. sd. showing oil 6,429-38 ft.; coring 7,296 ft.

Rapides Parish

R. D. Webb No. 1 A. M. Brasher, sec. 32-4n-2w. Drlg. sh. 1,590 ft.

St. Bernard Parish

Gulf Oil Corp. No. 1 Lake Lery, sec. 31-14s-14e. Drlg. sd. and sh. 5,100 ft.

Southern Sulphur Co. No. 2 State Lake Borgne, sec. 38-14s-15e. 13⅜-in. csg. 301 ft.; drlg. sdy. sh. 2,170 ft.

St. Landry Parish

Superior Oil Prod. Co. No. 2 A. Savoie, sec. 26-8s-3e. 11¾-in. csg. 1,180 ft.; cg. sh. 5,980 ft.; T.D. 6,588 ft.; 7-in. csg. 6,583 ft.; perf. csg. 5,855-88 ft.; P.B. 5,650 ft.; W.O.C.

St. Martin Parish

Texas Co. No. 9 St. Martin, sec. 21-8s-7e. 18⅝-in. csg. 106 ft.; drlg. sh. and L. 8,360 ft.

Texas Co. No. 3 State, sec. 14-10s-9e 18-in. csg. 101 ft.

St. Mary Parish

Texas Co. No. 1 Horse Shoe Bayou, sec. 40-17s-9e. Drlg. sh. and L. 10,901 ft.

Texas Co. No. 1 State-Bateman Lake, sec. 21-16s-12e. Loc.

Terrebonne Parish

Humble O. & R. Co. No. 1 H. J. Ellender, sec. 23-13s-19e. 9⅝-in. csg. 8,735 ft.; coring sd. and sh. 9,287 ft.

Shell Pet. Corp. No. 1-B Realty, sec. 18-17s-15e. T.D. 9,483 ft.; oil sd. rec. 12 bbls. of oil on drill-stem test 9,461-83 ft.; 7-in. csg. 9,457 ft.; cored to 9,493 ft.; recovered 3 ft. of gray sd. good odor; I.P. 873 B.P.D. through ¼-in. ck.; T.P. 1,700 lbs.; C.P. 1,600 lbs.

Vermilion Parish

Continental Oil Co. No. 1 O. C. Hebert, sec. 20-12s-3e. T.D. 11,732 ft.; circulating with mud; well tried to blow out; fsg. for stuck D.S.; hole cleaned to 10,680 ft.; set cmt.; P.B. to 10,800 ft.; sdtrkd. at 10,800 ft.; T.D. 12,216 ft., 5-in. csg. 11,795 ft.; flowed est. 5,000,000 ft. of dry gas per day through ¼-in. ck.; C.P. 3,950 lbs.; T.P. 3,500 lbs. Tubing and csg. sanded up; recovered tubing; milled bit off of 5-in. csg. at 11,975 ft.; fsg. for drill collar and bit at 11,795 ft.

Drunella Oil Co. No. 1 Cardwell, sec. 41-13s-4e. T.D. 8,156 ft.; abd.

TEXAS

Week Ending February 27

GULF COAST FIELDS

Raccoon Bend—Austin County

Humble O. & R. Co. No. 7-C A. Grawunder, W. C. White Sur. T.D. 4,160 ft.; abd.

Humble O. & R. Co. No. 13-X Sherrod, W. C. White Sur. T.D. 4,100 ft., 5½-in. csg. 4,038 ft.; I.P. 360 B.P.D. through ¼-in. ck.

Humble O. & R. Co. No. 18-X R. W. Thompson, W. C. White Sur. Drlg. sh. 2,547 ft.

Hastings—Brazoria County

Frost, Lowery & Goldston No. 1 Cecil Brown, center Lot 12, B.B.B.&C. Sur. Drk.

Humble O. & R. Co. No. 1-B Brown, Perry & Austin Sur. Drlg. 5,618 ft.

Humble O. & R. Co. No. 3-B Brown, Perry & Austin Sur. Loc.

Humble O. & R. Co. No. 2 P. A. Hoidale, Lot 16, B.B.B.&C. Sur. T.D. 6,080 ft.; W.O.C.

Humble O. & R. Co. No. 1 King, H.T.&B. Sur. Drlg. sh. 1,620 ft.

Humble O. & R. Co. No. 1 C. M. Moody, Blk. 11, B.B.B.&C. Sur. Loc.

Humble O. & R. Co. No. 1 Warring-Flint, Lot 15, B.B.B.&C. Sur. T.D. 6,080 ft.; 5½-in. csg. 6,000 ft.; I.P. 26 B.P.H. through ¼-in. ck.

Navarro Oil Co. No. 2 Callahan, Lot 5, H.T.&B. Sur. No. 29. Loc.

Navarro Oil Co. No. 1 Callahan, Lot 6. H.T.&B. Sur. No. 29. Loc.

South Gulf Oil Corp. No. 1 M. L. Gann, C of 10-ac. blk., Blk. 21, H.T.&B. Sur. No. 29. 10¾-in. csg. 1,800 ft.; T.D. 6,080 ft.; running csg.

Stanolind O. & G. Co. No. 3-A Avitts, H.T.&B. Sur. No. 29. Loc.

Stanolind O. & G. Co. No. 2 Blount, H.T.& B. Sur. No. 29. Loc.

Stanolind O. & G. Co. No. 2 Brown. T.D. 6,080 ft.; 7-in. csg. 5,914 ft.

Stanolind O. & G. Co. No. 1 Condon, H. T.&B. Sur. No. 29. Coring sh. and sd. 5,927 ft.

Stanolind O. & G. Co. No. 8 Drake, H.T. &B. Sur. No. 36. T.D. 6,080 ft.; 7-in. csg. 5,934 ft.; I.P. 228 bbls. in 9 hrs. through ¼-in. ck.

Stanolind O. & G. Co. No. 2 T. C. Edwards, Wm. Henry Sur. Drlg. sh. and sd. 1,325 ft.

Stanolind O. & G. Co. No. 10 Ford, A.C. H.&B. Sur. 10¾-in. csg. 1,648 ft.; T.D. 6,080 ft.; I.P. 597 B.P.D. through ¼-in. ck.

Stanolind O. & G. Co. No. 3 Law, H.T.&B. Sur. No. 36. Loc.

Stanolind O. & G. Co. No. 2 Long, H.T.&B. Sur. No. 29. Loc.

Stanolind O. & G. Co. No. 1 A. C. McKibben, H.T.&B. Sur. No. 29. Loc.

Stanolind O. & G. Co. No. 1 Miller, H.T.& B. Sur. No. 29. Drlg. sh. and L. 5,905 ft.

Stanolind O. & G. Co. No. 3 Surface, B. B.B.&C. Sur. Drk.

Stanolind O. & G. Co. No. 8 Williams, A. C.H.&B. Sur. No. 1. R.U.

Windsor Oil Co. No. 1 Hirsch, B.B.B.& C. Sur. T.D. 6,065 ft.; 7-in. csg. 6,048 ft.; I.P. 645 B.P.D. through ¼-in. ck.

Lockridge—Brazoria County

Gulf Oil Corp. No. 1 Fred Reiss, J. W. Hall Sur. T.D. 8,164 ft.; fsg.

Gulf Oil Corp. No. 1 Carrie Baker, J. W. Hall Sur. No. 68. Drlg. sh. 2,415 ft.

Shell Pet. Corp. No. 2 Ramsey State farm, J. W. Hall Sur. No. 68. Drlg. sh. 3,-505 ft.

Gulf Oil Corp. No. 1-A G. L. Wood et. al., Thomas Alsberry Sur. No. 4 Abst. No. 2. Bldg. drk.

Manvel—Brazoria County

Burton Drilling Co. No. 1 J. Kroll, center Lot 101, A.C.H.&B. Sur. No. 92. Loc.

Burton Drlg. Co. No. 2 Mortgage Ld. and Trust Co. Cen. Lot 102, A.C.H.&B. Sur. No. 92. T.D. 4,075 ft.; 7-in. csg. 4,067 ft. I.P. 475 B.P.D. through ¼-in. ck.

R. A. Stone No. 1 Nichols, E. Little Sur. Drk.

Texas Co. No. 15 Belcher, H. N. Little Sur. Drlg. sh. and L. 3,295 ft.

Texas Co. No. 24 Houston Oil Field As. Lot 16, A.C.H.&B. Sur. Bldg. drk.

Texas Co. No. 3 O. L. Rash, T. Spraggins Sur. Bldg. drk.

West Columbia—Brazoria County

Texas Co. No. 15 Abrams, George Tenille Lge. Sur. 10-in. csg. 1,156 ft.; drlg. sd. and L. 2,289 ft.

Old Ocean—Brazoria County

Harrison and Abercrombie No. 3 Bernard River, Charles Breen Sur. 9⅝-in. csg. 6,670 ft.; cmtd. 4,304 ft. of 7-in. csg. at 10,004 ft.; drlg. hard sd. 10,434 ft.

Heyser—Calhoun County

Humble O. & R. Co. No. 6 Elizabeth Welder, J. Maria Rios Sur. Loc.

Humble O. & R. Co. No. 5 E. H. Welder, J. M. Rios Sur. R.U.

Humble O. & R. Co. No. 8-A P. H. Welder, J. M. Rios Sur. Drlg. sd. 5,498 ft.

Humble O. & R. Co. No. 10-B P. H. Welder, A. Sisneros Sur. T.D. 5,491 ft.; I.P. 7 B.P.H. through 9/64-in. ck.

Humble O. & R. Co. and Plymouth Oil Co. No. 11-B P. H. Welder, A. Sisneros Sur. Drlg. sh. and L. 3,381 ft.

Portilla Drilling Co. No. 4-C P. H. Welder, A. Sisneros Sur. Drk.

Portilla Oil Co. No. 5-C P. H. Welder, A. Sisneros Sur. T.D. 5,476 ft.; I.P. 300 B.P.D. through 3/16-in. ck.

Anahuac—Chambers County

Gulf Oil Corp. No. 5 W. Knowles, sec. 48, H.&.T.C. Sur. Drlg. sh. and L. 5,137 ft

Gulf Oil Corp. No. 2 Pommer, sec. 40, H &T.C. Sur. R.U.

Gulf Oil Corp. No. 3 G. C. Wilcox, sec. 48, H.&T.C. Sur. Drlg. sh. and L. 5,-212 ft.

Humble O. & R. Co. No. 10 Broussard-Hebert, sec. 59, H.&T.C. Sur. Drk.

Humble O. & R. Co. No. 11 Broussard-Hebert, sec. 59, H.&T.C. Sur. Loc.

Humble O. & R. Co. No. 12 J. E. Broussard, sec. 63, H.&T.C. Sur. Drk.

Humble O. & R. Co. No. 8 Engles, sec. 50, H.&T.C. Sur. Drlg. sh. 6,237 ft.

Humble O. & R. Co. No. 7 Grippon, sec. 51, H.&T.C. Sur. Drlg. L. 1,087 ft.

Humble O. & R. Co. No. 9 H. A. Grippon, H.&T.C. Sur., sec. 53. T.D. 7,080 ft.; I.P. 26 B.P.H. through ¼-in. ck.

Humble O. & R. Co. No. 4 Shaver, sec. 53, H.&.T.C. Sur. T.D. 7,131 ft.; I.P. 249 B.P.D.

Humble O. & R. Co. No. 10-B White, J. McGahey Sur. T.D. 7,131 ft.; I.P. 27 B.P.H. through ¼-in. ck.

Humble O. & R. Co. No. 11-B White, J. McGahey Sur. Drlg. sh. 285 ft.

Navarro Oil Co. No. 1 E. Drought, H.&T.C. Sur., sec. 46. R.U.

Sun Oil Co. No. 2 White, J. McGahey Sur. T.D. 7,274 ft.; P.B. 7,141 ft.; abd.

Sun Oil Co. No. 24 White, J. McGahey Sur. Drk.

Cotton Lake—Chambers County

Kirby Pet. Co. No. 1 W. D. Haden, Chambers County Sch. Land Sur. R.U.

Salt Dome Oil Co. No. 1-B Lawrence, S. Barrow Sur. T.D. 6,532 ft.; perf. csg. 6,497-99 ft.; 7-in. csg. 6,525 ft.; flw. 45 bbls. of fluid 24 hrs. through 3/16-in. ck.

Seabreeze—Chambers County

Sun Oil Co. No. 1-A White, J. G. White Sur. No. 128. O.W.D.D.; T.D. 9,055 ft.; reaming old hole at 7,923 ft.

Sun Oil Co. No. 1-B White, Wm. Mays Sur. 18⅜-in. csg. 1,226 ft.; T.D. 8,162 ft.; reaming.

Big Creek—Fort Bend County

Gulf Oil Corp. No. 74 T. W. Davis, M. Young Sur. Drlg. sh. 2,499 ft.

Jenal Oil Co. No. 3 Bryan et al., M. Young Sur. Drlg. sh. 2,790 ft.

Boling—Fort Bend County

Mack Hank Oil Co. No. 3-B J. R. Farmer, J. Scott Sur. Drlg. 300 ft.

Mack Hank Oil Co. No. 4-C E. C. Farmer, J. Scott Sur. Drlg. 1,200 ft.

Orchard—Fort Bend County

Gulf Oil Corp. No. 49 J. M. Moore, Germain Immg. No. 8. 13⅜-in. csg. 2,522 ft.; drlg. sh. 4,551 ft.

Gulf Oil Corp. No. 51 Moore, Mark Smith Sur. Drlg. sh. and L. 2,205 ft.

High Island—Galveston County

Stanolind O. & G. Co. No. 1-B Cade, H. Denman Sur. Drlg. sh. 1,360 ft.

Stanolind O. & G. Co. No. 61 Cade, N. Fitzsimmon Sur. Bldg. drk.

Stanolind O. & G. Co. No. 60-A Cade, M. Duncan Sur. 7-in. csg. on bottom; perf. csg. 6,094-6,113 ft.; I.P. 688 B.P.D. through ¼-in. ck.

Dickinson—Galveston County

Atlantic O. & Ref. Co. No. 1 G. O. Anderson, P. G. Merritt Sur. Loc.

Coast Pet. Corp. No. 5 Maco Stewart, W. K. Wilson Sur. T.D. 8,515 ft.; reaming.

Coast Pet. Corp. No. 6 Maco Stewart, W. K. Wilson Sur. Loc.

Humble O. & R. Co. No. 1-C Bayou Development Co., J. Sellers Sur. R.U.

Humble O. & R. Co. No. 14-A Stewart, W. K. Wilson Sur. T.D. 8,848 ft.; I.P. 343 B.P.D. through ¼-in. ck.

Humble O. & R. Co. No. 15-A Maco Stewart, W. K. Wilson Sur. Loc.

Humble O. & R. Co. No. 16-A Maco Stewart, W. K. Wilson Sur. R.U.

Pure Oil Co. No. 4 J. W. Shelor, G. W. Banks Sur. Drlg. sh. and sd. 1,228 ft.

Pure Oil Co. No. 1 Sealy Hutchings, P. G. Merrett Sur. 10¾-in. csg. 1,826 ft.; drlg. sd. and sh. 4,367 ft.

Sinclair Prairie Oil Co. No. 1 W. Weems, W. K. Wilson Sur. Loc.

Stanolind O. & G. Co. No. 1 Dameani, W. K. Wilson Sur. R.U.

Greens Lake—Galveston County

Sun Oil Co. No. 7 Hughes, sec. 26, W. C. M. Baker Sur. Drlg. sh. 2,612 ft.

Silsbee—Hardin County

Humble O. & R. Co. No. 1 Mrs. M. L. Kirby, G. W. Brooks Sur. Loc.

Republic Prod. Co.-Houston Oil Co. No. 6 Brooks, G. W. Brooks Sur. 10¾-in. csg. 1,500 ft.; W.O.C.

Republic Prod. Co.-Houston Oil Co. No. 7 Brooks, G. W. Brooks Sur. Perf. csg. 6,892-6,898 ft.; testing.

Republic Prod. Co.-Houston Oil Co. No. 8 Brooks, G. W. Brooks Sur. 10¾-in. csg. 1,587 ft.; W.O.C.

Sour Lake—Hardin County

Texas Co. No. 231 fee, Stephen Jackson Lge. T.D. 1,936 ft.; P.B. 1,874 ft.; 7-in. csg. 1,800 ft.; swabbed and flowed 150 B.P.D.; R.U. to pump.

Clinton—Harris County

Stanolind O. & G. Co. No. 1 D. A. Oates, C. Martinez Sur., Abst. 543. T.D. 6,930 ft.; running 9⅝-in. csg.

Mykawa—Harris County

West Prod. Co. No. 10 W. H. Irwin, W. B. Walker Sur. Drk.

Pierce Junction—Harris County

Rio Bravo Oil Co. No. 30-A Settegast, P. H. Kopinan Sur. Bldg. drk.

South Houston—Harris County

Stanolind O. & G. Co. Drlg. Dist. No. 16. 9⅝-in. csg. 1,474 ft.; drlg. sh. and L. 3,800 ft.

Stanolind O. & G. Co. Drlg. Dist. No. 28. 9⅝-in. csg. 1,441 ft.; drlg. sh. and L. 3,797 ft.

Stanolind O. & G. Co. No. 6 First Natl. Bank, Callahan and Vince Sur. Bldg. drk.

Stanolind O. & G. Co. No. 2 Green, H.T. &B. Sur. No. 6. Bldg. drk.

Stanolind O. & G. Co. No. 2 J. C. Kelley, H.T.&B. Sur. No. 6. 10¾-in. csg. 1,382 ft. T.D. 4,000 ft.; 6⅝-in. csg. 3,962 ft.; I.P. 405 B.P.D. through ¼-in. ck.

Tomball—Harris County

Humble O. and R. Co. No. 1 Albert Martens, G. Lamb Sur. T.D. 5,567 ft.; P.B. 5,557 ft.; 5½-in. csg. 5,566 ft.; I.P. 16 B.P.H. through ¼-in. ck.

Humble O. & R. Co. No. 2-B J. F. W. Cobb, J. Edwards Sur. T.D. 5,590 ft.; W.O.C.

Humble O. & R. Co. No. 2 Fred Martens, G. Lamb Sur. Drlg. sh. 4,317 ft.

Humble O. & R. Co. No. 5 H. S. Gebhard, W. Perkins Sur. T.D. 3,988 ft.; fsg.

Humble O. & R. Co. No. 1 Tomball Townsite, Unit 13, R. Hubbard Sur. Bldg. drk.

Shell Pet. Corp. No. 2 Beeler, J. Pruitt Sur. Drlg. sd. 342 ft.

Texas Co. No. 4 Ziegler, Wm. Hurd Sur. T.D. 5,581 ft.; 7-in. csg. 5,571 ft.

Mauritz—Jackson County

Shell Pet. Corp. No. 1-B Mauritz. Drk.

Amelia—Jefferson County

Glenn H. McCarthy No. 3-B Longe, H. Williams Sur. Spudded.

Humble O. & R. Co. No. 1 T. H. Crook, C. Williams Sur. Drlg. sh. 3,539 ft.

Humble O. & R. Co. No. 1 Freeman, C. Williams Sur. Drk.

Humble O. & R. Co. No. 1 Industrial Investment Co., Unit 1-B, C. Williams Sur. Drk.

Humble O. & R. Co. No. 2 M. Lefler, Amelia Heights Subd., C. Williams Sur. R.U.

Humble O. & R. Co. No. 2 R. J. Peveto. R. J. Peveto Sur. Top sd. 6,760 ft.; T.D. 6,781 ft.; 7-in. csg. 6,781 ft.; I.P. 576 B.P.D. through ¼-in. ck.

Big Hill—Jefferson County

Stanolind O. & G. Co. No. 1 Fitzhugh, McFaddin Sur. 10¾-in. csg. 1,861 ft.; T.D. 4,927 ft., oil sand, 7-in. csg. 4,913 ft.

Fannett—Jefferson County

Gulf Oil Corp. No. 1 Junker, W. A. Smith Sur. Drlg. sd. rock 4,967 ft.

Nome—Jefferson County

Shell Pet. Corp. No. 4 Carpenter, M. Peveto Sur. T.D. 6,055 ft.; running csg.

Shell Petroleum Corp. No. 5 Carpenter, M. Peveto Sur. Bldg. drk.

Shell Pet. Corp. No. 4 Paggi, J. W. Kirby Sur. Top sd. 6,016 ft.; T.D. 6,055 ft.; 5-in. csg. 6,010 ft.; flowed 128 B.P.D. through ¼-in. ck.

Sun Oil Co. No. 1 Long, J. Blair Sur O.W.D.D.; T.D. 9,045 ft.; cutting and pulling 7-in. csg; hole cleaned to 5,-679 ft.

Sun Oil Co. No. 1 A. J. Mouboules, J Blair Sur. 10¾-in. csg. 1,062 ft.; drlg. sh. and L. 6,481 ft.

Hankamer—Liberty County

Gulf Oil Corp. No. 2-A Weiser, George Stengler Sur. Spudded.

Hull—Liberty County

Bishop Oil Co. No. 1 C. R. Wilson, J. DeVore Sur. Drk.

D.&L. Production Co. No. 4 Mecon and Layton, J. DeVore Sur. Drk.

Eclipse Oil Co. No. 1 Barrow. T.D. 5,014 ft.; S.D.

Gulf Oil Corp. No. 23 Baldwin, J. Devore League Sur. R.U.

Republic Prod. Co. No. 1 J. C. Baldwin J. Devore Sur. Drlg. sh. 5,237 ft. No report.

Esperson—Liberty County

General Crude Oil Co. No. 26 Moores Bluff. Spudded.

Bay City—Matagorda County

Hamman Expl. Co. No. 1 J. H. Crocker, E. Hall Sur. 13⅜-in. csg. 1,260 ft.; 9⅝-in. csg. cmtd. at 6,500 ft.; T.D. 9,-575 ft.; 7-in. csg. 9,575 ft.; perf. csg. 8,806-19 ft., 8,832-36 ft., 8,944-8,949 ft., tested S.W.; set cement retainer at 8,871 ft.; cutting tbg.

Hawkinsville—Matagorda County

Sun Oil Co. No. 2 Craig, T. Williams Sur Top salt 796 ft.; base salt 2,099 ft 18⅝-in. csg. 2,174 ft.; 13⅜-in. csg. 3,700 ft.; drlg. sd. 3,727 ft.

Markham—Matagorda County

Texas Gulf Prod. Co. No. 1 McDonald, I. &G.N. Sur. No. 7. T.D. 4,419 ft.; P.B. and sidetracked. Drlg. sh. 3,712 ft.

Thompson Drlg. Co. No. 1 R. J. Sisk, Blk. No. 2. T.D. 426 ft.; W.O.C.

Turman Oil Co. et al No. 1 Hudson, H. Parker Sur. R.U.

Van Vleck—Matagorda County

Skelly Oil Co. No. 2 W. P. Johnson, M Cummins Sur. Loc.

Royal Oil Co. No. 1 Fine Holub, M. Cummings Sur. Drk.

Skelly Oil Co. No. 2 Rugely, I.&G.N. Sur No. 8. 10¾-in. csg. 1,399 ft.; drlg. sh. 5,562 ft.

Skelly Oil Co. No. 1 First Natl. Bank I.&G.N. Sur. No. 7. Drlg. 6,987 ft.

Conroe—Montgomery County

Gar-Flo Oil Co. No. 3 Keystone, A. Steel Sur. T.D. 5,060 ft.; 7-in. csg. 5,045 ft.; I.P. 465 B.P.D. through ¼-in. ck.

Houston Oil Co. No. 13 R. L. Cartwright J. Davis Sur. T.D. 5,155 ft.; 7-in. csg. 5,137 ft.

Normandie Oil Corp. No. 1 Koonce, D. W Collins Sur. T.D. 5,147 ft.; 7-in. csg. 5,122 ft.; I.P. 492 B.P.D. through ¼-in. ck.

Ace—Polk County

Peyton Bros. No. 2-B Kirby & West, G. S. Thomas Sur. Abd. 4,887 ft.

Segno—Polk County

J. K. Dorrance No. 2 Wing Estate, I.&G.N. Sur. No. 15. Drlg. sh. 2,333 ft.

Humble O. & R. Co. No. 1 Kirby Lbr. Co., P. Garcia Sur. Loc.

Quintana-O'Connor-Greta—Refugio County

Hewitt & Daugherty No. 40 Lambert, Swisher No. 7 Sur. Coring 5,898 ft.

Hewitt & Daugherty No. 41 Lambert, Swisher No. 7 Sur. Drlg. 2,737 ft.

Illinois Pet. Co. No. 2 Heard, Ximines Sur. Drlg. 5,550 ft.; recovered 3,420 ft. of oil on D.S.T. 5,530-50 ft.

Illinois Pet. Co. No. 1 Wilson Heard, Ximines Sur. T.D. 5,909 ft.; W.O.C.

Josey & Bruton No. 4-A Lambert, Swisher Sur. Drlg. 2,230 ft.

Floboots Oil Corp. No. 3-C O'Brien, Winifield Sur. Drlg. 4,612 ft.

Quintana Pet. Co. No. 3 Heard, Ximines Sur. T.D. 5,929 ft.; tstg.

Quintana Pet. Co. No. 44-A Tomoconnor, Swisher Sur. T.D. 5,923 ft.; I.P. 1,264 B.P.D. through ⅜-in. ck.

Quintana Pet. Co. No. 5 Heard, T. H. Webb Sur. Drk.

Quintana Pet. Co. No. 40 Lambert, Swisher Sur. Loc.

Quintana Pet. Co. No. 43 Lambert, Swisher Sur. Loc.

Quintana Pet. Co. No. 46-A Tom O'Connor, J. M. Swisher Sur. No. 4. Drk.

Quintana Pet. Co. No. 11-E Tom O'Connor, Maine Sur., Blk. 39. T.D. 5,920 ft.; 5½-in. csg. 5,918 ft.

Quintana Pet. Co. No. 3 Riley, M. J. Ximines Sur. Drk.

United Gas Corp. No. 37 Lambert, Swisher Sur. No. 6. T.D. 5,891 ft.; tstg.

United Gas Corp. No. 38 Lambert, Swisher Sur. S.D. 5,660 ft.

United Gas Corp. No. 30 Lambert, Blk. 43, Swisher Sur. Drlg. 3,550 ft.

United Gas Co. No. 12 J. J. O'Brien. T.D. 6,318 ft.; run csg.

Keeran—Victoria County

Gulf Oil Corp. No. 10 Keeran Estate, M. DeLeon Sur. R.U.

Union of California No. 3 J. M. Keeran Estate, M. DeLeon Sur. Loc.

Placedo—Victoria County

Barnsdall Oil Co.-American Liberty Oil Co. No. 3 J. M. Pickering, A. Murray Sur. 7-in. csg. 4,758 ft.; T.D. 4,775 ft.; I.P. 194 B.P.D. through 3/16-in. ck.

Barnsdall-American Liberty Oil Co. No. 9 J. M. Pickering et al., J. W. Black Sur. Drk.

Barnsdall Oil Co.-American Liberty Oil Co., Lot 4, S.A.&M.G. Sur. Coring 5,-260 ft.

Crown Central Oil Co. No. 4 O. M. Lauder, S.A.&M.G. Sur. No. 6. Drlg. sh. 2,310 ft.

Magnolia Pet. Co. No. 5 Charles Sklar, S A.&.M.G. Sur. R.U.

Shell Pet. Corp. No. 1 Houston Natl. Bank S.A.&M.G. Sur. No. 7. Coring sh. 4,-706 ft.

Sun Oil Co. No. 5 Marek, Lot 89, S.A.&M.G. Sur. No. 8. Drlg. 4,310 ft.

Superior-Gillespie No. 2 Joe Hosek, S.A.& M.G. Sur. No. 70. M.I.M.

Westgate Oil Co. No. 6 F. F. Mieska, S.A. &M.G. Sur. No. 10. Drk.

Clay Creek—Washington County

Sun Oil Co. No. 1 H. Lauter, N. Clay Sur. 7-in. csg. 7,445 ft.; T.D 8,306 ft.

Sun Oil Co. No. 7 Schlottman, J. F. Perry Sur. Abd. 2,080 ft.

Virginia Oil Co. No. 1 Joe Kenieczny, S. M. Williams Sur. Moving in drk.

Five Corners—Wharton County

Texas Co. No. 6-B Pierce, J. Hyland Sur. Drlg. sh. and L. 4,805 ft.

Pickett Ridge—Wharton County

Texas Co. No. 1 J. Tiustos, H.&T.C. Sur. No. 192. R.U.

Spanish Camp—Wharton County

Felmont Oil Corp. et al No. 1 Lyle Logue, D. Wade Sur. Drlg. 7,580 ft.

Withers—Wharton County

Texas Co. No. 21-C Pierce, Wm. Pettus Sur. 10¾-in. csg. 1,218 ft.; drlg. sh. and L. 3,551 ft.

Texas Co. No. 22-C Pierce, Wm. Pettus Sur. Drlg. sd. and sh. 5,556 ft.

Texas Co. No. 23-C Pierce, Wm. Pettus Sur. Drlg. gumbo 927 ft.

GULF COAST WILDCATS

Austin County

B. L. Hopkins No. 1 J. W. Recnecke, J Stephenson Sur. R.U.

Brazoria County

Beatty, Bowles and Borsodi No. 1 Trustee Lot 4, Blk. 8, H.T.&B. Sur. 9⅝-in. csg. 6,430 ft.; T.D. 10,082 ft.; P.B. 5,600 ft. prepare to perforate csg. 5,575-82 ft.; tested S.W.; abd.

Ohio Oil Co. No. 1 Hazel Roirt, D. McNeil Sur. No. 2. Drlg. sh. 5,920 ft.

Pure Oil Co. No. 1 P. M. Slade, S. F. Austin Lge. Drlg. clay 336 ft.

Texas Co. No. 2 Robbins, James W Brougham Sur. T.D. 987 ft.; running csg.

Calhoun County

Matagorda Oil Co. No. 1 Brundet, Tr. 8 Matagorda Island. 12⅝-in. csg. at 1,814 ft.

Colorado County

Eden Oil Co. No. 1 Trulia Wells, M. Whitting and Osborne League. 10¾-in. csg. 650 ft.; drlg. sdy. sh. 5,709 ft.

Fayette County

McNeil Pet. Co. No. 1 Dybla, A. Thompson Sur. 10¾-in. csg. 21 ft.; drlg. 1,510 ft.

Galveston County

Shell Pet. Corp. No. 2 Maco Stewart, 4,400 ft. E of No. 1 J. Spillman Sur. 10¾-in. csg. 1,484 ft.; drlg. sd. 4,748 ft.

Hardin County

T. S. Deskin No. 1 Mary B. Collier, O. G. Nelson Sur. Loc.

E. J. Kimball No. 1 Keitle Lbr. Co. Loc.

Harris County

Farrel and Cox No. 1 Bender, N. W. Travis Sur. 6⅝-in. csg. 1,000 ft.; W.O.C.

R. W. Ford et al No. 1 W. A. and O. C. Pruitt, G. Brooks Sur. Loc.

George Lawrence et al No. 1 Zoppa, J Farwell Sur. 10¾-in. csg. 605 ft.; T.D. 6,525 ft.; P.B. to test sd. 6,206-26 ft.; stuck drill pipe at 1,500 ft.; S.D.

H. M. Harrell et al No. 1 F. N. Bullock, Charles Bowman Sur. R.U.

Stanolind O. & G. Co. No. 1 Warren Minerals, H.T.&B. Sur. No. 1. 7⅝-in. csg. 5,749 ft.; drlg. sdy. sh. 6,183 ft.

Texas Gulf Prod. Co. No. 1 Gillespie and Garnsey, Simon Contreras Sur. 10¾-in. csg. 1,438 ft.; drlg. sh. 4,050 ft.

Houston County

American Liberty Oil Co. No. 1 J. D. Bean, D.W.R.R. Co. Sur. 10¾-in. csg. 1,796 ft. Drlg. sh. and shells 5,370 ft.

Arthur Cameron No. 1 A. B. Spence, D. Aldrich Sur. Drlg. sh. and shells 5,275 ft.

Jefferson County

Humble O. & R. Co. No. 1 Jefferson Ld. Co., C. Hillibrant Sur. T.D. 8,232 ft.; 7-in. csg. 8,162 ft.; coring sh. 8,371 ft.

Lavaca County

Welshire Union Oil Co. No. 1-A Pohl & Bass Sur. T.D. 3,250 ft.; P.B. 2,950 ft.; two tests failed; S.D.

Liberty County

Kenco Oil Corp. No. 1 E. B. Pickett, H. T.&B. Sur. No. 10. 10¾-in. csg. 1,237 ft.; T.D. 6,846 ft., drill stem stuck.

Matagorda County

Continental Oil Co. No. 2 Robbins, J. C. Franz Sur. 11¾-in. csg. 6,430 ft.; drlg. 7,645 ft.

Glenn McCarthy No. 1 Foley, sec. 19, Susan Perkins Sur. 10¾-in. csg. 2,008 ft. Coring sh. and sd. 7,983 ft.

Strake Pet. Co. No. 1 G. T. Sargent, L. E. Parker Sur. 13⅜-in. csg. 1,607 ft.; 9⅝-in. csg. 6,750 ft.; drlg. sh. 9,272 ft.

United North and South Development Co., J. S. Cotton Sur. Coring sh. and sd. 7,739 ft.

Polk County

Mayo et al No. 1 Catline Mayo, J. G. Loving Sur. S.D. 36 ft.

Refugio County

Paul Meadows No. 1 Temple Lbr. Co., G. W. Main Sur. S.D. 6,760 ft.

Wynne Drlg. Co. No. 1 C. D. Roadche-J. Patrick & J. Downey Sur. Drlg. 2,730 ft.

Tyler County

Republic Prod. Co.-Houston Oil Co. No. 1 Hurd, N. Hurd Sur. R.U.

Victoria County

Magnolia Pet. Co. No. 1 Annie B. Wayne, T.&N.O. Sur. No. A-407. Tested 275 lbs. pressure on D.S.T. 2,389-2,420 ft.; drlg. 2,490 ft.

Plymouth Oil Co. No. 1-A J. J. Welder, S. A. Beldina Sur. Drlg. 2,000 ft.

Walker County

Garland, Hartman & Page No. 1 Carey Ld. & Dev. Co., D. M. McDonald Sur. R.U.

Roswell Oil Co. No. 1 J. Bosborn, J. Jordan Sur. S.D. 520 ft.

Waller County

Sumas Prod. Co. of Austin No. 1 J. J. Menker. 10¾-in. csg. 300 ft.; S.D. 3,926 ft.

H. E. Williams No. 1 T. C. Giddings Est., David Mouser Sur. Drlg. 120 ft.

Washington County

Smith & Schlinke No. 1 Woode, J. Clark Sur. S.D. 3,000 ft.

Wharton County

Sam Harrison No. 1 Byerly, E.T.R.R. Sur. No. 27. Drlg. sh. 4,984 ft.

Texas Co. No. 1 Kluck, Jos. Hyland Sur. Drlg. sh. and L. 4,422 ft.

Texas Co. No. 1 E. A. Wheatherer, L. P. Ogden Sur. R.U.

S. W. TEXAS WILDCATS

Aransas County

Barnsdall Oil Co. No. 1-A Kate Edwards, 330 ft. S line, Lot 85, 660 ft. SW No. 1, Wm. Lewis Sur. Set 10¾-in. csg. 1,408 ft.; drlg. 1,510 ft.

Atascosa County

Frontier Oil Co. No. 1 Oppenheimer, John Sharp Sur. Set csg. 2,770 ft.; bailing.

F. Fuchs No. 1 Sanders, J. P. Garmon Sur. Drlg. 2,812 ft.

R. J. Roberts et al No. 1 Elder, Sur. 190. Drlg. 911 ft.

Bee County

Dirks Bros. No. 1 Strouch, 990 ft. S line, 150 ft. W line, 50-ac. tr., sec. 19, Uranga grant. Drk.

J. R. Dougherty No. 1 Weiss, 1,300 ft. E line, 6,200 ft. N line, Uranga Gr. R.U. and S.D.

Illinois Pet. Co. No. 1 Hartzendorf, Geo. A. Kern Sur. T.D. 3,909 ft.; R.U. to pump.

La Salle Pet. Co. No. 1 Ray, Anna Burk Sur. T.D. 5,400 ft.; S.D.

W. C. McBride, Inc., No. 1 Brown & Hansen, J. Pace Sur. T.D. 1,600 ft.; S.D.

Bexar County

Woodward & Hardy No. 1 Sons of Herman, H. Pace League 37. D.&A.; T.D. 1,720 ft.

Blanco County

E. L. Nixon No. 1 Hornberger, 1,200 ft. S line, 300 ft. E line, Sur. 723. Drlg. 697 ft.

Brooks County

Texas Gulf Prod. Co. No. 1 Proctor, 330 ft. S and E lines, Blk. 2, sec. 20, Los Almos and Loma Blanca Surs. T.D. 291 ft.; S.D.

Burleson County

M. R. Exploration Co. No. 3 Fountain, Wm. Raleigh Sur. M.I.M.

Red Bank Oil Co. No. 2 Grann, 3,063 ft. N line, 1,900 W line, E. Santef Sur. M.I. Rig.

Caldwell County

C. A. McDaniels No. 1 Trammel, H. Hunter Sur. Drk.

Exploration Co. No. 1 E. Band, S. Seale Sur. Reworking 2,430 ft.

C. A. McDaniels No. 1 Tinkle, S. Seal Sur. T.D. 2,681 ft.; P.D. 2,490 ft.; swbg. oil.

George Young No. 1 Schmidt, 1,265 ft. E line, 150 ft. S line, Williams Sur. Set csg. 1,362 ft.; W.O.C.

Cameron County

Saxet Prod. Co. No. 1 Port Isabel Irr. Co., 600 ft. N line Loma Alta Lake, Sh. 29, Espiritu Santo Gr. Loc.

Stapper Petroleum Corp. No. 1 Port Isabel Irrigation Co., Blk. 17, P.I.I.Co. Subd., Santo Gr. Set surf. csg. 1,500 ft.; W.O.C.

Duval County

Argo Oil Co. and Clopton No. 2 Smith-Corkill, Sur. 61. T.D. 3,140 ft.; P.B. 2,760-88 ft.; testing.

Atlantic Ref. Co. No. 1 Hamilton, sec. 37. Loc.

Frank Gravis No. 1 Vaello Puig, 330 ft. W line, 2,718 ft. S. line, 1,760.73-ac. tr., Sur. 250. R.U.

C. K. Gravis No. 1 Holzapfel, N½ Sur. 42. Drlg. 321 ft.

Humble O. & R. Co. No. 1 C. D. Sevier, Sur. 329 ft. Drlg. sh. 3,463 ft.

Magnolia Pet. Co. No. 1 D.C.R.C., 330 ft. S and W lines, lse., sec. 902. Loc.

Edwards County

Auld, Dodson & Lyman No. 1 Rigsby, sec. 16. Loc.

I.T.I.O. No. 1 Love & Evans, sec. 66, Blk. 3, G.W.T.&P. Ry. Sur. (Workover). Prep. deepen from O.T.D. 3,002 ft. to 6,250 ft.

Plateau Oil Co. No. 1 R. L. Hatch, sec. 66, J. W. May Sur. S.O. 4,885 ft.; T.D. 5,176 ft.; D.&A.

Fayette County

McNeil Pet. Co. No. 1 Dybola, A. Thompson Lge. R.U.

Goliad County

Rual Singer No. 1 C Wood, Geo. Villa Sur. Cg. 4,667 ft.

Gonzales County

M. S. Holliday No. 1 Edwards, W. W. Page Lge. Drlg. 1,356 ft.

Guadalupe County

Lincoln Pet. Co. No. 1 Baenzinger, Mansola Sur. Set csg. 1,990 ft. Drlg. plugs.

Hidalgo County

Dale Smith No. 1 Fairbanks & Young, Blk. 44, Porc. 46, jurisdiction of Reynosa. Drlg. 2,278 ft.

Rinehart et. al. No. 1 White, 7,500 ft. E line, 7,200 ft. N line, Ejidos Gr. Spudded.

Sun Oil Co. No. 1-A Sweeny Est., Lot 1, Wayne Wood Subd. No. 2. T.D. 6,598 ft.; stdg.

Jim Hogg County

Gifford Oil Co. No. 1 Armstrong, Sur. 43. 5-min. D.S.T. 3,056-63 ft.; made 400 lbs. dry gas; sd. 3,056-61 ft.; T.D. 3,900 ft., S.D.; W.O.O.

S. Payne No. 1 Holbien, 150 ft. N and W lines, Blk. 10, Sh. 3, Animas Gr. R.U.

Jim Wells County

Arkansas Fuel Oil Co. No. 1 G. H. Bierstadt, Blk. 32, Reynolds Sur. Spudded.

R. G. Swiger No. 1 R. Adams, Sur. 122. Cg. 4,206 ft.

Tesmalis & Reese No. 1 Martha Earhart, 330 ft. S and W lines, 80-ac. tr., Suggs Sur. Loc.

Karnes County

De Graff & Reele No. 1 Cochran, 460 ft. E line, 160 ft. S line, McConnell Lge. Drlg. 573 ft.

L. Glasscock No. 1 Conway, 146-ac. tr., J. Johnson Sur. Set csg. 3,308 ft.; T.D. 3,308 ft.; blew out making 10,000,000 ft. gas, killed.

Victoria Drlg. Co. No. 1 John Yanta, J. Hardaway Sur. Drlg. 1,367 ft.

Victoria Drlg. Co. No. 1 Wm. Yanta, J. Hardaway Sur. M.I.M.

Kerr County

S. W. Forrester No. 1 Baily, Brendle Sur. No. 408. Washing down 740 ft.

Live Oak County

H. Coquat No. 1 L. Reagan, Santiago McGloin Sur. Drlg. 2,037 ft.

R. H. Feltner No. 2 Sanger, 330 ft. W line, 990 ft. N line, Sur. 385. Loc.

Loma Oil Co. No. 2 Cardwell, 95-ac. tr., Sparks Sur. Loc.

Marzo Oil Co. No. 1 Chestnut, L. Ayres Sur. Set sur. csg.; W.O.C.

Reynolds & Richardson et al No. 1 Geo. West, 330 ft. N and W lines, sec. 515, J. Poitevent Sur. M.I.M.

R. B. Sanger No. 1 Adams, 330 ft. N and E lines, 80-ac. tr., Sur. 122. R.U.

McMullen County

Big Rock Oil Corp. No. 1 Martin, Uleiting Sur. No. 6. S.D. 532 ft.

R. H. Feltner No. 1 Rhodes, NE ¼, Sec. 18. Drlg. 1,786 ft.

E. M. Jones No. 1 Ezell, 160-ac. tr., Sec. 3, Ezell Subd., Adams Sur. Blew out in gas sd. killed and capped.; R.U. to rework.

Rowan & Hope No. 1 Rhodes, NE¼ sec. 18, Seale & Morris Sur. M.I.M.

Medina County

F. Brown No. 1 Bilhartz, J. Campbell Sur. 24. D.&A. 200 ft.

A. Chmel No. 1 Odem, 160 ft. W line, 493 ft. N line tr., Castro Sur. 174. M.I.M.

Nueces County

Allen & Seaboard Oil Corp. No. 2 Chapman, 660 ft. S and W lines, sec. 38. 10-min. D.S.T. 6,462-71 ft. with 930 ft. water cushion, recovered. 1,080 ft. 42 grav. P.L.O. with W.P. 20 lbs.; cored oil sd. 6,464-83½ ft., sh. 6,483½-6,507 ft.; T.D. 6,532 ft.; csg.

Cowan & Storey No. 1 Smith, Blk. 22, sec. 38, Flour Bluff and Encinal Garden Trs. Drk.

E. M. Jones No. 1 Cook, 2,500 ft. N line, 330 ft. E line, 546-ac. tr., Guadrilla Irr. Co. Sur. 139. Set 13⅜-in. csg. 572 ft. S.D. water.

Mills Bennett Prod. Co. No. 1 Lamb, 330 ft. E Mathis Highway, 330 ft. N line, 80-ac. tr., 527.4-ac. tr., V. Lopez de Herrera Sur. Drlg. 5,079 ft.

Sloan & Green No. 1 Cassens, sec. 36, Longorio Sur. R.U.

Southern Minerals Corp. No. 1 R. King, sec. 32, King Farm Lots. Drk.

Steve Paul No. 1 Smith, 1,650 ft. E line, 330 ft. S line, sec. 38, Flour Bluff Encinal Trs. Loc.

Baltic Drlg. Co. No. 1 Poenisch, Lot 2, Blk. 32, Flour Bluff Addn. (workover of former Hurlburt test). O.T.D. 6,250 ft.; R.U.; S.D.

Real County

Sun Oil Co. No. 1 Dietert, 1,980 ft. E line, 660 ft. S line, sec. 7, G.W.T.&B. Sur. Drlg. 4,797 ft.

San Patricio County

Buckingham Oil Co. No. 1 G. Davis, Sec. 27. Loc.

W. B. Craig No. 1 Drainage Ditch, M. Remon Sur. Hd. sd. cap. 4,907-10 ft.; sd. 4,910-11 ft. S.O.; tested 1,030 ft. salty mud, taste of oil; testing again.

Eleanor Oil Co. No. 1 Davis, 208.8-ac. tr., G. Grover Sur. M.I.M.

Eleanor Oil Co. No. 1 Green Est., 1,674-ac. tr, T. T. Williamson Sur. Spudded; set surf. csg.; W.O.C.

Phillips Pet. Co. No. 1 Schmidt, sec. 81, Paul Subd. Set 10¾-in. csg. 774 ft.; W.O.C.

Windsor Oil Co. No. 1 Bissett, Tr. 3, Tivoli Subd., Crockett Sur. Loc.

Starr County

J. H. Clopton No. 4 Tijerina, Lot 12, Sh. 14-C, Porc. 80. Drlg. 176 ft.

Dodd Trustee No. 1 Wood Estate, Porc. 84. Drlg. sh. 1,567 ft.

Donroy Oil Co. No. 1 Ramon, 2,400 ft. SE line, 150 ft. SW line, sec. 150. Drlg. 282 ft.

Webb County

J. M. Anderson No. 1 Juarez, Blk. 13, Sur. 1,111. Set surf. csg. 20 ft.; W.O.C.

O. W. Killam No. 1 fee, Sur. 1,690. Drlg. 3,926 ft.

Lu-Tex Oil Co. No. 1-A Lone Star Constr. Co., Blk. 36, Porc. 12, 13 and 14. Drlg. 1,521 ft.

Mills Bennett Prod. Co. No. 1 J. K. Kirkpatrick Sur. 14. Drlg. 2,173 ft.

Mills Bennett Prod. Co. No. 1 Martinez, Blk. 84, Sh. 1, E. P. Grullo Gr. Loc.

Joe Palmer No. 1 Laredo Natl. Bank, 1,980 ft. S and W lines, Sur. 463. Loc.

Porter & Blanchard No. 1 Perez et. al., 330 ft. S and E lines, sec. 1010. Spudded.

Wilcox O. & G. Co. No. 1 Dunbar, Sur 2,292, J. Galen Gr. Drlg. 3,127 ft. (cor.)

Willacy County

Ruez-Morton, Inc., No. 1 F. Armendias, C Lot 9, Sh. 4, San Juan de Carricitos Gr. Drlg. 87 ft.

Ruez-Morton, Inc., No. 1 Johnson-Stillman, Lot 14, Blk. 25, Sh. 44, San Juan de Carricitos Gr. R.U.

Shell Pet. Corp. No. 1 Yturria, Sh. 64, San Juan de Carricitos Grant (workover). T.D. 7,662 ft.; to drill deeper; R.U.

Zapata County

Ivan Howard and R. F. Duggan No. 1 Cuellar Bros., Sur. 248. R.U.

Jennings No. 1 Martinez, Sur. 434. T.D 150 ft.; S.D.

R. Wheeless No. 1 Welch, Blk. 1. E. K. Bateman Subd. Loc.

Zavalla County

Wilcox O. & G. Co. No. 1 Gillman, sec. 11. Drlg. 1,826 ft.

S. W. TEXAS PROVEN

McCampbell—Aransas-San Patricio Counties

Atlantic Ref. Co. No. 3-B McCampbell, Lot 5, Blk. 40. Drlg. 5,662 ft.

Atlantic Ref. Co. No. 3-C McCampbell, Lot 40. T.D. 6,551½ ft.; perforated 6,540-44 ft.

Atlantic Ref. Co. No. 4-C McCampbell, Lots 11 and 12, Blk. 40. Loc.

Buckingham Oil Co. No. 3-A McCampbell, 660 ft. S. of No. 1-A, Blk. 42. T. sd. 6,515 ft.; T.D. 6,546 ft.; perforated 6,541-44 ft.; comp. 119 B.P.D. on ⅛-in. ck.

Buckingham Oil Co. No. 4-A McCampbell, Blk. 41, Orick Sur. Loc.

Buckingham Oil Co. and Jones No. 1-B McCampbell, Lots 13 and 14, sec. 40. Set csg. 6,557 ft.; W.O.C.; T. sd. 6,522 ft.

Collins & Broughton No. 1 McCampbell, Lot 5, Blk. 37, McCampbell Subd. Drlg. 1,563 ft.

J. Nelson No. 1 Riggs, 330 ft. NW line, 213 ft. SW line, 6.46-ac. tr., Trs. 12 and 13, Blk. 16. Loc

Hilbig—Bastrop County

Joe E. Mills No. 1 Askew, 600 ft. NW line, 1,525 ft. SW line, 278.5-ac. tr., Wolfenberger Sur. T.D. 2,907 ft.; S.D.

Cosden—Bee County

Elwood & Young No. 3 Barnett, John Place Sur. Sd. 3,636-53 ft.; S.O.; P.B. 3,910 ft.; T.D. 4,050 ft.; S.D.; W.O.O.

Plummer—Bee County

W. C. McBride No. 1 Plummer, 34-ac. tr., sec. 33, Plummer-Chessman Sur. Loc.

Alta Mesa—Brooks County

Standard of Texas No. 2 Mestina, La Mestina de Gonzalina Gr. Drlg. 2,457 ft.

Standard of Texas No. 3 Mestina, La Mestina de Gonzalina Gr. Drlg. 2,392 ft.

Alta Verde—Brooks County

L. & W. Oil Co. No. 1 Wm.Singer, Blk. 4, Sur. 436, Sd. 515-20 ft.; set ¼-in. csg. 934 ft.; T.D. 948 ft.; tested sulfur wtr. with S.O.; prep. to drill deeper.

Branyon—Caldwell County

Adams & Lyles No. 3 Ellison, D. Cooper Sur. Cg. 2,047 ft.

R. B. Byrd No. 1 McGee, J. A. Neal Sur. Drlg. 212 ft.

Colby O. Co. No. 2 McCrory, 20-ac. tr., J. Neil Sur. Loc.

Easten & Manning No. 1 Lawler, Pinchback Sur. Comp. 125 B.P.D.; T.D. 2,125 ft.

Lincoln Pet. Co. No. 4 Branyon, Cooper Sur. Loc.

Strickland No. 1 Callihan, J. R. Miller Sur. Comp. 40 B.P.D.; T.D. 2,090 ft.

Taylor Ref. Co. No. 2-B Branyon, D. Cooper Sur. Comp. 50 B.P.D. on pump; T.D. 2,132 ft.

Taylor Pet. Co. No. 1 Caldwell County, 4-ac. tr., D. Cooper Sur. Drlg. 566 ft.

Whisenant & Trenchard No. 2 Magee, J. A. Neal Sur. D.&A. 2,187 ft.

Whisenant & Trenchard No. 1 Young, J. R. Miller Sur. T.D. 2,225 ft.; R.U. to pmp.

Slick—DeWitt County

Southwestern Dev. Synd. No. 1 Potter, O. Marshall Sur. D.S.T. 4,215-35 ft.; show gas and 190 ft. mud in 10 min.; D.S.T. 4,221-40 ft.; 45 ft. oily mud with gas; W.P. 290 lbs.; set 5½-in. csg.; cleaning in pits, flowing 1-2 B.P.H. on ⅝-in. ck. T.D. 4,240 ft.

Charamousca—Duval County

N. V. Duncan No. 3 Worden-Drought, Sur. 151. Sd. 1,560-68 ft. tested S.W.

Magnolia Pet. Co. No. 1 D.C.R.C., Sur. 151. Spudded.

Colmena—Duval County

Conservative Oil Co. No. 2 D.C.R.C.-Senta, 133 ft. N Eline, 1,200 ft. SE line, Blk. 13, sec. 51. S.D. 1,544 ft.

Wellington Oil Co. No. 1 D.C.R.C., 330 ft.

N and W lines, Blk. 11, sec. 51. T.&P. 1,529 ft.; comp. 77 B.P.D. jetting.
Wellington Oil Co. No. 2 D.C.R.C., Blk. 10, sec. 51. Sd. 1,491-99½ ft.; comp. 9 B.P.H. on ⅝-in. ck.

Driscoll—Duval County

Continental Oil Co. No. 13-A Sevier, Sur. 448. Spudded.

El Mesquite—Duval County

Rogers & Rogers No. 3 Pena, El Mesquite Gr. R.U.

Government Wells—Duval County

Magnolia Pet. Co. No. 11 Lundell, Sur. 60. Set csg. 2,257 ft.; W.O.C.
San Diego Oil Corp. No. 1 Millard, Sur. 64. Testing 2,514 ft.
Reed & McKay No. 14 Lundell, Sur. 60. Sd. 2,265-76 ft.; testing.
Southwest Drlg. Co. No. 2 Hahl, Sur. 64. Sd. 2,544-49 ft.; testing.

Hoffman—Duval County

Bridwell Oil Co. No. 7-B Hoffman, Sur. 122. R.U.
Bridwell Oil Co. No. 5 Robles, sec. 68 Tstg. sd. 2,696-99 ft.; recemented perf.; testing.
Bridwell Oil Co. No. 6-B Sutherland, 990 ft. S and E lines, Sur. 122. Sd. 2,801-21 ft.; comp. 22 B.P.D.
Duval Oil Corp. No. 9 Hoffman, Sur. 118. Testing 2,857 ft.
Duval Oil Corp. No. 10 Hoffman, Sur. 118. Loc.
Plymouth Oil Co. No. 4 Hoffman, sec 117. T.D. 2,826 ft.; P.B. 2,705 ft.; comp. on pump.
Standard of Kansas No. 3 Green, Sur. 118. Sd. 2,716-18 ft.; testing.

Kohler—Duval County

Chiquita Oil Co. No. 1 Peters, 162-ac. tr., Sur. 162. Spudded.
Humble O. & R. Co. No. 3 Peters, sec. 398. Flwg. 10 bbls. fluid for 17 hrs., 36% wtr.; T.D. 2,658 ft.; P.B. 2,655 ft.; rng. tbg. 2,655 ft.
Sun Oil Co. No. 1 Peters, 330 ft. S and W lines, Sur. 161. Set csg. 2,446 ft.; comp.; gasser; spraying oil.
Windsor Oil Co. No. 5-B Peters, Sur. 34. Loc.

Labbe—Duval County

Magnolia Pet. Co. No. 2 Labbe ranch, 990 ft. S and W lines, sec. 1. Sd. 2,904-10 ft.; D.S.T. 290 ft. P.L.O. in 10 min.; set 7-in. csg. 2,910 ft.; deepened to 2,915 ft.; T.D. 3,249 ft.; P.B. 2,908 ft.; comp. 35 B.P.D. on pump.

Loma Novia—Duval County

Duval Oil Corp. No. 30 Bishop, sec. 57. Drlg. plugs 2,574 ft.
Eastern Texas Prod. Co. No. 5 Hubbard, Sur. 71. R.U.
Hamil & Son No. 3 Ruiz, Sur. 41. Comp. 40 B.P.D.; T.D. 2,593 ft.
Humble O. & R. Co. No. 22 Ruiz, sec. 553 T.D. 2,753 ft.; comp. 8 B.P.H. on pump.
Humble O. & R. Co. No. 23 Ruiz, Sur. 553. T.D. 2,780 ft.; swbg.
Humble O. & R. Co. No. 24 Ruiz, Sur. 553. Drk.
Magnolia Pet. Co. No. 57 Hahl, Sur. 67. Sd. 2,736-43 ft.; T.D. 2,757 ft.; comp. 2,000,000 ft. gas.
Rosan Oil Co. No. 4-A Hubbard, Sur. 71 M.I.M.
Russ Pet. Co. No. 8-D Ruiz, SW¼ SE¼, sec. 64. Testing 2,520 ft.
Steiren & Wright No. 13 Wright, Sur. 72. T.D. 2,623 ft.; D.&A.
Texas Co. No. 20 Bishop, 160-ac. tr., sec. 57. T.D. 2,584 ft.; comp. 50 B.P.D.

Lopez—Webb—Duval Counties

Gem Oil Co. No. 2 Peal, Sur. 72. Sd. 2,100-12 ft.; perforating.
Humble O. & R. Co. No. 9-C D.C.R.C., Sur. 901. Sd. 2,131-40 ft.; set csg.; comp., no gauge.
Humble O. & R. Co. No. 10-C D.C.R.C., Sur. 901. Drlg. sd. 2,126 ft.
Mills Bennett Prod. Co. No. 17 Billings, Sur. 113. R.U.
Mortimer & Springer No. 18-B Peal, Sur. 796. T.D. 2,158 ft.; comp. 15 B.P.H.
Mortimer & Springer No. 21-B Peal, Sur. 796. T.D. 2,169 ft.; comp. 15 B.P.H.
Mortimer & Springer No. 22-B Peal, Sur. 796. R.U.

Peters—Duval County

Rio Bravo Oil Co. & Coates No. 2-C Peters, Sur. 398. Drlg. 2,256 ft.
Windsor Oil Co. No. 1 Peters, Sur. 34 (workover). Testing sd. 2,628-44 ft.

Piedra Lumbre—Duval County

Magnolia Pet. Co. No. 11 D.C.R.C., Sur. 100. T.D. 1,971 ft.; rng. tbg.

Sarnosa—Duval County

Humble O. & R. Co. No. 3 Arnshire, Sur. 130. Sd. 2,398-2,426 ft.; setting csg.

Seven Sisters—Duval County

W. W. Blocker No. 3 Benton-Coopwood, Sur. 382. T.D. 2,700 ft.; D.&A.
Dulce Oil Co. No. 5 Serna, Sur. 384. R.U.
Humble O. & R. Co. No. 44 Smith, Sur. 382. Drlg. sh. 2,435 ft.
Humble O. & R. Co. No. 36 Badgley, Sur. 307. T.D. 2,492 ft.; comp. 6 B.P.H. on ¼-in. choke.
Humble O. & R. Co. No. 5 Dowdy, sec. 272. Drlg. sh. 1,547 ft.
Humble O. & R. Co. No. 47 Smith, Sur. 352. Comp. 22 B.P.H.; T.D. 2,487 ft.
Reliance Oil & Roy. Co. No. 1-A Lichtenberger, sec. 225. R.U.
Texas Co. No. 10 Badgley, Sur. 307. Drlg. sh. 997 ft.
Westheimer & Daube No. 30 Campos, Sur. 224. R.U.

Sweeden—Duval County

Tom Graham No. 1 Villareal, 330 ft. N and W lines, tr., San Andres Gr. Loc.
Hiawatha O. & G. Co. No. 1 Herberger, 330 ft. S and W lines, sec. 10, Agua Poquita Gr. Drlg. 4,077 ft.
Hiawatha O. & G. Co. No. 1 Miller, 330 ft. N and E lines, sec. 24, Agua Poquita Gr. Drlg. 3,596 ft.

Pearsall—Frio County

Amerada Pet. Corp. No. 7 Oppenheimer, 1,-320 ft. W line, 330 ft. S line, Gibson Sur 16. (W.O.); stdg. 5,573 ft.; T. chalk 5,220 ft.; comp. 100 B.P.H.; T.P. 150 lbs.; C.P. 1,130 lbs.

North Pettus—Goliad-Karnes Counties

Diamond Halff Oil Co. No. 1-C Gillette. 745-ac. tr., J. Gomez Sur. Sd. 3,668-3,-876 ft.; completing.
Jane Oil Co. No. 6 Smith, B.&B. Sur. No. 25. T.D 3,727 ft.; set 5½-in. csg. 3,712 ft.; W.O.C.

Clark—Guadalupe County

Diamond Halff Oil Co. No. 2 Larison, G. DeWitt Sur. Spudded.
D. Mulholland No. 1 Johns, J. K. Davis Sur. Spudded.

Darst Creek—Guadalupe County

Freeman Oil Co. No. 3 Larrison, G. DeWitt Sur. 13. Loc.
La Jita Corp. No. 2 Denmann, 50-ac. tr. Set csg. 2,332 ft.; T.D. 2,332 ft.; T. Chalk 2,279 ft.; comp. 145 B.P.D.
Saxet Prod. Co. No. 1 Inman, G. DeWitt Sur. Spudded.
V. G. Schimmel No. 2 Grimm, Dewitt Sur. T.D. 2,525 ft.; W.O. pump.

Nolte—Guadalupe County

Riddle Oil Co. No. 1 Herff, Gortari Sur. No. 76. Set csg. 20 ft.; W.O.C.
Riddle Oil Co. No. 2 Nolte, Lowell Sur. 16. R.U.
Wheelock & Collins No. 1 Warnecke, 335-ac. tr. R.U.

Sal Mar—Guadalupe County

Perot Oil Corp. No. 1 Priestly, Williams Sur. 46. Sat. chalk 2,006½-9 ft.; drlg. plugs.

LaBlanca—Hidalgo County

Gulf States Oil Co. No. 3 Engleman, Lot 3, Blk. 70, Las Mestanas Gr. (workover). O.T.D. 6,812 ft.; P.B. 6,692 ft.; drlg. 7,716 ft.
Sterling O. & R. Co. No. 1 Engleman, 660 ft. N and E lines, Lot 8, Blk. 95. Set Surf. csg. 1,250 ft.; drlg. 5,877 ft.

Mercedes—Hidalgo County

Union Sulphur Co. No. 7 American Rio Grande, Tr. 2,309, Blk. 59, (workover), perf. csg. 7,481-91 ft.; P.B. 7,592 to 7,-513 ft.

Samfordyce—Hidalgo-Starr Counties

Cosmo Petroleum Co. No. 1 Guerra, Sh. 254, Porc. 40. R.U.
Ralph Fair No. 1 Flores, 30-ac. tr., Sh. 250, Porc. 38. Spudded.
E. A. Graham No. 1 Yturria Ld. & Livestock Co., Tr. 9, Porc. 100. Cg. 2 872 ft.
Harrison & Danvers No. 5-A Guerra, 30.78-ac. tr., Tr. 251, Porc. 38. Sd. 2,813-28 ft.; comp. 14 B.P.H.
Henshaw Bros. No. 1 Elizando, Porc. 39. Drlg. 3,027 ft.
Val-Tex Oil Co. No. 2 Chapa, Tr. 250, Porc. 39. Spudded.
Young & Bonnear No. 1 Diaz, Tr. 331, Porc. 40. R.U.

Alworth—Jim Hogg County

French Oil Co. No. 4 Garza, Blk. 1, Sur. 269. Fsg. 2,620 ft.

Randado—Jim Hogg County

J. W. Adams No. 1 Allen, B.G.&F. Sur. 48. R.U.
Randado O. Corp. No. 36 Palacious, Blk. 18, Sur. 291. Tstg. sd. 1,283-87 ft.; tested S.W. some oil; D.&A.

Bentonville—Jim Wells County

Danciger Oil Co. No. 1 Bird, de la Garcia grant. M.I.M.
Tom Graham No. 2 Luby, Share 4, Los Presnos de Abajo Gr. Drlg. 5,672 ft.
Stanolind O. & G. Co. No. 1 Bird, de la Garcia Gr. T.D. 5,790 ft.; W.O.O.
Stanolind O. & G. Co. No. 2 Pope, sec. 13, King Farm Lots. Sd. 5,688-93 ft.; tstg.

Premont—Jim Wells County

Tom Graham No. 2-A Bennett, 660 ft. E of No. 1-A. Sd. 2,256-61 ft.; comp. 4.7 B.P.H. on ⅜-in. choke.
Tom Graham No. 2 Johnson, Lot 76, Sur. 215. Sd. 2,349-54 ft.; set csg. 2,354 ft.
Tom Graham No. 1 Laughlin, sec. 76. Sd. 2,257-69 ft.; set csg.; W.O.C.
Tom Graham No. 1 L. E. Seeligson, cen. Lots 81 and 96, sec. 77. M.I.M.
Tom Graham No. 1 Wm. Singer, C Lots 71 and 74, Sur. 76. T.D. 3,400 ft. P.B. 3,163-67 ft.; perf. 3,157-64 ft.
Tom Graham No. 1-A Singer, Lots 71 and 74, sec. 76. Spudding.
W. F. Morgan No. 2 Laughlin, Tr. 7 and 10, sec. 76, Sur. 231. R.U.
Richardson, Ware & Richardson No. 1 Miller, cen. Lots 40 and 41, Holdeman Subd., sec. 71. Drk.
Securities Royalty Co. No. 1 Miller, Lots 40 and 41, sec. 231. M.I.M.
S. J. Sloan No. 1 Nash, Lot 102, Holdeman Subd., sec. 75. Set csg. 2,350 ft.; W.O.C.

Sandia—Jim Wells County

O. W. Killam No. 8 Wade, Blk. 40-A, Lopez de Jean Gr. D.S.T. 3,981-4,021 ft.; 400 lbs. gas and 90 ft. oily mud in 9 min.; sd. 4,013-21 ft.; comp. 2½ B.P.H. on ¼-in. choke.
J. E. Walsh No. 2 Wade, Lot 2, Blk. C. Bode Subd. Stdg. 2,875 ft.; prep. resume drlg.

Kingsville—Kleberg County

Great States Oil Co. No. 1 Kivlin, Blk. 4, sec. 39. S.D. 2,485 ft.

Oakville—Live Oak County

Simmons O. & G. Co. No. 2-B Reagan Heirs, 451-ac. tr. S.D. 2,710 ft.

Calliham—McMullen County

R. P. Lightfoot No. 9 Lark, Blk. 118, Scrugham Sur. Loc.

Rhodes—McMullen County

Rowan & Hope No. 2 Edrington, 80-ac tr., Sur. 81. Set csg. 1,790 ft.; comp. 20,000,000 ft. gas.

Ina—Medina County

Ina O. & R. Co. No. 3 Viola Wilson, Durst Sur. S.D. 742 ft.

Taylor—Medina County

R. C. Hill No. 1 Odem, H. Castro Sur. Comp. 4 B.P.D. on pump; T.D. 300 ft.

Agua Dulce—Nueces County

Lockhart Bros. No. 1 Elliff, 4,501 ft. E line, 466 ft. S line, 3,054.9-ac. tr., Antonio Longorio Gr. Sd. and sh. 6,863-67 ft.; T.D. sh. 6,912 ft.; perf. csg. 6,410-20 ft.; cleaning gas and dist. in pits.
Stoddart & Moss No. 1 Colman, 330 ft. NW and NE lines, SE¼ SW 330-ac. tr., sec. 206. S.D. 6,885 ft.; blew out and closed in; to attempt comp. through drill stem.
Texon Drlg. Co. No. 2 Elliff, 5,580 ft. S line, 466 ft. E line, 3,054.9-ac. tr., Antonio Longorio Gr. Abd. loc.
Texon Drlg. Co. No. 2-B Sevier, 880-ac. tr., W. W. Chapman Ld4., Palto Alto Gr. Set 16-in. csg. 300 ft.; T.D. 5,867 ft.; cutting stuck D.S.
United Prod. Co. No. 1 Harvey, 1,100 ft. W line, 1,050 ft. N line, tr., M. Garza Sur. Cg. 5,727 ft.

Clara Driscoll—Nueces County

Blanco Oil Co. and Buchanan No. 1 W. S. Gandy, 330 ft. S and W lines, E½ sec. 60. T.D. 7,308 ft.; D.&A.
Hiram Reed No. 2 Roper, C Lot 1, sec. 108. Perf. 3,901-05 ft.; gas and wtr.; to P.B. and perf. in 3,800-ft. sd. W.O.W.
Houston Oil Co. No. 1 Sevier, 330 ft. S and W lines, 77.1-ac. tr., Quadrilla Irr. Co., Sur. Loc.
Magnolia Pet. Co. No. 2 Sevier, 330 ft. S and W lines, 80-ac. tr., R. Russell Sur. Sd. 3,818-21 ft. show oil; set csg. 3,817 ft.; W.O.C.
H. M. Reed No. 1 Holloway, 330 ft. S and E lines, 51.8-ac. tr., sec. 108. Perf. 3,-902-04 ft.; flw. brackish wtr.; T.D. 4,388 ft.; T., abd.
Texas Co. No. 1 C. D. Sevier, Wm. Gambel Sur. Set csg. 647 ft.; W.O.C.
Wellington Oil Co. No. 1-A Sevier, 125-ac. tr., Wm. Gamble Sur. Set csg.; T.D. 6,075 ft.; perf. 5,348-54 ft.; comp. 20 B.P.D. on 3/16-in. choke; C.P. and T.P. 2,100 lbs.
Wellington Oil Co. No. 14 Sevier, 254.7-ac. tr., Wm. Gambel Sur. Drlg. 4,027 ft.

Flour Bluff—Nueces County

Humble O. & R. Co. et. al. No. 1 Gulden. Lot 30, Blk. 47. R.U.
Humble O. & R. Co. et al No. 2-A Miller, Blk. 25, sec. 47. T.D. sd. 6,652 ft.
Humble O. & R. Co. et al No. 1-B Miller, Blk. 5, sec. 48. T.D. 6,664 ft.; comp. 147 B.P.D. on ⅛-in. choke.
Humble O. & R. Co. et al No. 6 Phillips, Lot 11, Blk. 55. Drlg. sd. 6,629 ft.
Humble O. & R. Co. et al No. 2 Reed, Blk. 29, sec. 47. Comp. 117 B.P.D. on on ⅛-in. choke; T.D. 6,662 ft.
Humble O. & R. Co. et al No. 1-A Solar Sevier, Blk. 13, sec. 47. R.U.
Humble O. & R. Co. No. 2 Webster, Blk. 25, sec. 48. Set csg. 6,648 ft.; W.O.C.
S. Paul No. 1 Moulter, Blk. 16, sec. 41, Encinal Garden tracts. Loc.

London—Nueces County

Cosner & Cosner No. 1 Stockton, 330 ft. N and E lines, SW¼, NE¼, sec. 25. Spudded; set surf. csg.
Cosner & Cosner No. 2 Stockton, 330 ft. S and E lines, SW¼, NE¼, sec. 25. Loc.

Saxet Heights—Nueces County

Baltic Drlg. Co. No. 1 Dickson, Blk. 13, Oak Park Addn. Comp. 80 B.P.D. on 3/16-in. choke; sd. 4,082-90 ft.
Baltic Drlg. Co. No. 1 Grant, Lot 11, Oak Park Addn. Spudded.
W. C. Brady No. 1 Guy, C Lot 45, Country Club Addn. Drlg. 2,075 ft.
W. C. Brady, trustee No. 1 Hartley, 4-ac. tr., Ehlers Gardens tracts. Set surf. csg.; W.O.C.
W. C. Brady, trustee No. 1 London, cen. Lot 1, Ellendale Gardens, No. 3. Drk.
Callihan Bros. and Whitley No. 1 Hartley, Villareal Sur. R.U. and S.D.
Potter Pipe Line Co. No. 3 Cohen, 45-ac. tr., Villareal Sur. Comp. 168 B.P.D. on ⅛-in. choke; sd. 4,067-73 ft.
W. H. Harrison Drlg. Co. No. 1 Saunders, Blk. 13, Oak Park Addn. Sd. 4,061-80 ft.; comp., no gauge.
Chas. F. McGrew No. 3 Kelly, 19-ac. tr Sd. 4,060-90 ft.; set csg.; S.O. jetted S.W.; S.D.
W. N. Paul No. 2 Schallert, C Blk. "C." Harbor View Addn. S.D. 1,800 ft.; W.O.
Pedernal Oil Co. No. 1 John, Blk. 14, Oak Park Addn. S.D. 4,110 ft.; orders.
Taylor Pet. Co. No. 7 Country Club, 83-ac. tr., Villareal Sur. Drlg. 2,557 ft.
Taylor Pet. Co. No. 1 Kaler, 10-ac. Villareal Sur. Loc.
S. E. Willson, Jr., No. 1 Dunn, Blk. 2, Oak Park Addn. Spudded.
S. E. Wilson No. 1 fee, Blk. 2, Oak Park Addn. Sd. 4,070-79 ft.; set 5-in. csg. 4,070 ft.

Saxet—Nueces County

C. Andrade & Renwar Oil Co. No. 7 Frank, Sur. 416. Drlg. 2,021 ft.
Benson Drlg. Co. No. 1 Morgan, 330 ft. N and W lines, 40-ac. tr., Sur. 315 (W.O.). Old T.D. 4,483 ft.; R.U. to D.D.
Ben-Tex Oil Co. No. 2 Harmon, 990 ft. S line, 330 ft. E line, 50-ac. tr., Sur. 416. T.D. 6,760 ft.; Sd. 6,741-52 ft.; set csg.; W.O.C.
R. B. Bryant No. 1 Gallagher, Sur. 25. Cg. 3,967 ft.
Conservative Oil Co. No. 1-A R. Morgan, 80-ac. tr., Sur. 315. Set csg. on sd. 4,451-54 ft.; sdtrk. hole.
Conservative Oil Co. No. 4-B Morgan, 330 ft. N line, 1,984 ft. W line, Isc., Sur. 403. T.D. 6,977 ft.; perf. 5,145-50 ft.; testing.
A. D. Corgey No. 1 Page, 330 ft. S and E lines, 20-ac. tr., Sur. 716. Loc.
Crown Central Pet. Corp. No. 4-B Morgan, 80-ac. tr., Surs. 315 and 592. Sd. 4,444-45 ft.; set csg.; completing.
Crown Central Pet. Corp. No. 5-A Morgan, Sur. 315. Sd. 4,450-60 ft.; set 7-in. csg. 4,445 ft.; comp. 138 B.P.D. on 3/16-in. choke.
L. Glasscock No. 3 Hunter, 990 ft. N line, 330 ft. W line, 160-ac. tr., Dunn Sur. 312. Blew out; shut in; drlg. 3,416 ft.
L. Glasscock No. 1-B Johns, 20-ac. tr., McGregor Sur. Sd. 4,856-64 ft.; comp. 136 B.P.D. on 9/64-in. choke.
Great States Oil Co. and Violet Oil Corp. No. 7 McGregor-Belk, Sur. 311. D.S.T. 6,318-26 ft.; recd. 1,000 ft. oil, 90 ft. S.W.; sd. 6,208-26 ft.; set csg. 6,326 ft.; cleaning into pits.
W. H. Harrison Drlg. Co. No. 1 Taggert, 50-ac. tr., Sur. 401. M.I.M.
Hiawatha O. & G. Co. No. 1 Hutchins-Stillwell, Lot 34, Sheppard Lds. Perf. 5,853-63 ft.; recementing.
Hiawatha Oil Co. No. 9 Hutchins-Stillwell, Lot 34, Sheppard Lds. Sd. 5,833-47 ft. S. O.; recementing perf. at 5,833½-45½ ft.
W. B. Hinton No. 5 Cole, 330 ft. N line, midway between Nos. 3 and 4, 60-ac. tr., Villareal Sur. Loc.
Houston Oil Co. No. 12 McGregor, 135-ac. tr., Sur. 582. Set sur. csg. 1,390 ft.; drlg. sh. 4,557 ft.
Houston Oil Co. No. 14 Morgan, 2,310 ft. S line, 330 ft. W line, 493-ac. tr. T.D. 4,865 ft.; perf. 4,415-26 ft.; rng. tbg. 4,426 ft.
Houston Oil Co. No. 18 Morgan, sec. 7, Rge. 5. D.S. testing 4,422 ft.
H. H. Howell No. 2 Hutchins, 80-ac. tr., Sur. 416. Sd. 6,711-28 ft.; set csg. 6,720 ft.; W.O.C.
H. H. Howell No. 1 R. Morgan, Blk. 3, Roberts Subd., Sur. 415. Drlg. 6,047 ft.
Maryland Corp. No. 6 Morgan, Sur. 592. Perf. csg. 4,422-26 ft.; swbg.
Maryland Corp. No. 1 Stillwell-Sagarin, 4.4-ac. tr., Sur. 500. T.D. 6,338 (cor.); S.D., W.O.O.
Morgan & Chapman Minerals No. 6 Morgan Clark, NE¼, Sur. 405. Cg. sd. 6,314 ft.
North Star Oil Co. No. 7 R. Morgan, W½ SE¼, Sur. 405 (workover). O.T.D. 5,835 ft.; to D.D. to 8,000 ft.; drlg. 5,947 ft.
Oso Drillers, Inc., No. 4 Roark, 660 ft. E line, 1,200 ft. S line, 106-ac. tr., Villareal Gr. T.D. 7,218 ft.; perf. 4,281 ft.; recementing.
Pan American Prod. Co. No. 7-A Morgan, 9-ac. tr., Sur. 403. Sd. 5,821-26 ft.; set csg.; comp. 166 B.P.D. on 5/32-in. choke.
Pan American Prod. Co. No. 8-A Morgan, 89-ac. tr., Sur. 403. Drlg. 4,093 ft.
Pan American Prod. Co. No. 4-A Sagarin, Sur. 500. Sd. 5,815-26 ft.; comp. 124 B.P.D. on ⅛-in. choke.
Pan American Prod. Co. No. 5-A Sagarin, 89-ac. tr., Sur. 403. Set sur. csg.; W.O.C.
Pan American Prod. Co. No. 4 Solar Sevier, 140-ac. tr., Sur. 582. Drlg. 4,652 ft.
Phillips Pet. Co. No. 5 Hutchins, 40-ac. tr., Blks. 29 and 30, Sheppard Farm Lots (W.O.). Cg. 6,807 ft.
Renwar & Maryland No. 6 Morgan, Sur. 315. Sd. 4,434-42 ft.; rng. tbg.
Republic Nat. Gas Co. No. 4-A Donigan, 240-ac. tr., sec. 6 and 7, Rge. 6. Drlg. 3,547 ft.
Republic Nat. Gas Co. No. 17 Dunn, Blk. 37, Sheppard Farm Lots. Set csg. 4,850 ft.; W.O.C.
Republic Nat. Gas Co. No. 2 Hutchins, 60-ac. tr., sec. 9, Rge. 5. Drlg. 4,262 ft.
Republic Nat. Gas Co. No. 3-A Morgan, sec. 405. Drlg. 1,780 ft.
Richardson Pet. Co. No. 20 Cain & Secrist, Blk. 23, Russell Farm Lots. Perf. csg. 4,417-21 ft.; setting screen and liner.
Richardson Pet. Co. No. 5 Hoelscher, Blk. 22, Russell Farm Lots. Sd. 4,863-67 ft.; set csg.; W.O.C.
Richardson Pet. Co. No. 5 Perkins-La-Gasse, Blk. 26, Sheppard Farm Lots. Drlg. 6,693 ft.
Richardson Pet. Co. No. 4 Quiros, Blk. 40, Sheppard Lots. Sd. 5,822-32 ft.; drlg. plugs.
Richardson Pet. Co. No. 4 Sedwick, 185.4-ac. tr., Sur. 586. Drlg. 4,621 ft.
Southern Minerals Corp. No. 20 Bliss, 120-ac. tr., Sur. 416. Drk.
Southern Minerals Corp. No. 5 Mastin, Sur. 416. Cg. 6,323 ft.
Southern Minerals Corp. No. 10 Smith, Lot 5, Sheppard Farm Lots. Sd. 4,543-50 ft.; T.D. 4,553 ft.; comp. 108 B.P.D. on 5/32-in. choke.
Southern Minerals Corp. No. 12 Smith, Sheppard Farm Blk. 9. Cg. 4,572 ft.
Southern Minerals Corp. No. 13 Smith, Blk. 4, Sheppard trs. Set sur. csg.; W.O.C.
Texon Drlg. Co. No. 5 Vance, Thos. Gallaugher Sur. Drlg. 3,226 ft.

Stratton—Nueces County

Camp Prod. Co. No. 1 Wordner, 330 ft. E

line, 1,280 ft. N line, sec. 12, Stratton Subd. S.D. fuel 2,200 ft.

Plymouth—San Patricio County

Magnolia Pet. Co. No. 11 Corpus Christi Bank, sec. 24, Fourth Addn., Taft Lds Drk.

Plymouth Oil Co. No. 65-C Welder, sec. 71 Tstg. 6,585 ft.; prep. deepen.

Sun Oil Co. No. 5 Rossen, Lots 2 and 7, sec. 23, Fourth Addn. Drlg. 4,736 ft.

Taft Field—San Patricio County

Atlantic Ref. Co. No. 3 Pullin, 330 ft. N line, 380 ft. W line, 40-ac. tr., Lot 4 sec. 1, Second Addn. R.U.

Cage Prod. Co. No. 6 Mayo, Ottman Sur. No report.

Cage Prod. Co. No. 7 Mayo, 9,560 ft. W line, 990 ft. S line, 60-ac. tr., Ottman Sur. Loc.

Esues Oil Co. No. 4 Britton, Lot 8, sec. 6, Third Addn. Set csg. 4,008 ft.; completing.

Esues Oil Co. No. 5 Britton, Lot 3, Sec. 6, Third Addn. Sd. 4,901-10 ft.; comp. 160 B.P.D. on 5/32-in. choke.

Humble O. & R. Co. No. 3 Flynn, sec. 1, 2nd Addn. Drlg. sh. 4,889 ft.

Humble O. & R. Co. No. 18 Mayo, Ottman Sur. Drlg. O. sd. 4,929 ft.

White Point—San Patrico County

Crown Central Pet. Corp. No. 1 White Point Dev. Co., 100-ac. tr. D.S.T. 4,888-4,905 ft.; rec. 2,100 ft. oil; 10 ft. sd. and S.W.; 30 lbs. W.P. 15-min.; sd. 4,900-05 ft.; set csg. 4,888 ft.; flowing 10 B.P.H. fluid 85 per cent S.W.

Alta Vista—Starr County

Moss & Heard No. 3 Ricaby, Porc. 83, J. of Camargo. Drlg. 527 ft.

Barbacoas—Starr County

K. E. Merren et al No. 1 S.C.C.C., Blk. 34. Porc. 89. R.U.

Los Olmos—Starr County

H. C. Owens No. 1 Ivey, Porc. 87. R.U.

St. Marys O. & G. Co. No. 1 Seabury, Porc. 87. Drlg. 317 ft.

Ted Stone No. 1 Kelsey-Bass, Porc. 87, J. of Camargo. S.D. 440 ft.

Rio Grande City—Starr County

Clopton & Reed No. 1 Green, Porc. 80. Drlg. 1,293 ft.

Clopton & Reed No. 4 Tijerina, Lot 12, Sh. 14-C, Porc. 80. Drlg. 392 ft.

Aviator—Webb County

Joe Palmer No. 1 Garcia, Sur. 463. R.U.

Cole—Webb County

O. W. Killam No. 49 Bruni, Blk. 5, Sur. 3. T.D. 2,955 ft., tested oil.

O'Hern—Webb County

Cole Pet. Co. No. 98 Benavides, Blk. 11, Sur. 412. Drlg. 3,372 ft.

Hamil & Smith No. 4-A Benavides, Sur. 585. Drlg. 846 ft.

Hamil & Smith No. 20 Benavides, Blk. 506. Comp. 5 B.P.H.; T.D. 2,944 ft.

Hamil & Smith No. 21 Benavides, Hale Subd. Drlg. 2,257 ft.

Hamil & Smith No. 32 Benavides, Hale Subd. Drlg. 2,547 ft.

Hamil & Smith No. 33 Benavides, Blk. 451. Set csg. 2,936 ft.; W.O.C.

Hamil & Smith No. 34 Benavides, Blk. 450. Comp. 350 B.P.D.; T.D. 2,940 ft.

Magnolia Pet. Co. No. 21 S. Benavides, Blk. 13, Sur. 174. Tested 25,000 ft. gas 2,829-49 ft.; cg. 2,857 ft.

H. J. Porter No. 1 Bruni, Blk. 585. Drlg. 2,127 ft.

H. M. Reed No. 4 Benavides, Blk. 299, Hale Subd. Swbg. 2,916 ft.

Starr Dev. Co. No. 1 Benavides, 330 ft. W and W lines, Sur. 173. M.I.M.

Sun Oil Co. No. 5-A Benavides, Blk. 508. R.U.

Sun Oil Co. No. 8-A Benavides, Blk. 507. Drlg. 2,716 ft.

Sun Oil Co. No. 4 Brennan-Benavides, Blk. 507, Hale Subd. Sd. 2,940-51 ft.; comp. 5 B.P.H.; T.D. 2,951 ft.

Texas Co. No. 4-A S. Benavides, Blk. 309, Hale Subd. Set csg. 2,909 ft.; comp. 168 B.P.D. on ¾-in. choke.

Texas Co. No. 5-A Benavides, Blk. 375. Set surf. csg.; W.O.C.

LaSal Vieja—Willacy County

Shell Pet. Corp. No. 1 Yturria, sh. 64, Carricitos Gr. Killed to rework; rig. screen and liner.

Charco Redondo—Zapata County

W. C. Bob No. 2 Martinez, S¼, Blk. 29 Quandudo Grant. Sd. 670-72 ft.; set csg.; W.O.C.

Cuellar—Zapata County

Magnolia Pet. Co. No. 4 Cuellar, Sur. 245. M.I.M.

Escobas—Zapata County

B. W. Roscoe No. 6 Bustamente, 197.8-ac. tr., Sh. 33. Loc.

Texas Co. No. 96 Jennings, Cerrito Blanco Gr. Drlg. sh. 1,337 ft.

Haynes—Zapata County

J. D. Long No. 1 Phelps, Villa Gr. R.U.

Magnolia Pet. Co. No. 5 Haynes, Blk. 7, Haynes Subd. T.D. 1,476 ft.; D.&A.

Magnolia Pet. Co. No. 20 Haynes, Blk. 7, Haynes Subd. Comp. 45 B.P.D.; T.D. 1,138 ft.

Magnolia Pet. Co. No. 28 Haynes, Blk 7, Haynes Subd. Drlg. 257 ft.

Nordan & Morris No. 21 Haynes, Blk. 7, Haynes Subd. Drlg. 872 ft.

Magnolia Pet. Co. No. 22 Haynes, Blk. 7, Haynes Subd. Drlg. 597 ft.

Lopena—Zapata County

Ahler Bros. No. 1 Yzaguirre, Sh. 17, Porc. 15. Drlg. 536 ft.

Venture Pet. Co. No. 2 Rameres, Blk. 3, Porc. 18. Loc.

Wm. H. Winn No. 1 Carlos Vela, Blk. 6, Porc. 20. R.U.

E. C. TEXAS WILDCATS

Anderson County

American Liberty Oil Co. No. 1 G. E. Gauge, Blackfoot area, B. Gilbert Sur. Austin Chalk 3,980 ft.; drlg. 5,060 ft.

Tide Water Oil Co. et al No. 7 Monnig, S. Sanchez Sur., deep test, Long Lake field. Top Georgetown 5,904 ft.; drlg. 6,500 ft.

Angelina County

Ginter & Brown No. 2 Cope heirs, Jose Morin Sur., 3 mi. E of Dibol. M.I.R.

Hicks et al No. 1 Morris, J. Morris Sur., 3 mi. E of Dibol. S.D. 2,167 ft.

B. F. Hoffman No. 1 So. Pine Lbr. Co., B. J. Thompson Sur., C of SE¼ of Blk. 11, NE of Dibol. Drlg. 975 ft.

Summeral-Harris et al No. 1 M. L. Condrea, D. D. Maroney Sur., ¾ mi. W of Huntington. T.D. 1,472 ft.; bailed 100 bbls. fluid, 10 per cent wtr. in 24 hrs.; W.O.S.R.

G. T. Van-Hull No. 1 W. D. Ivy, 150 ft. S of C of E and W lines of 10-ac. tr., W. D. Welch Sur., E of Dibol. Drk.

Cherokee County

A. F. Richardson No. 1 F. P. O'Brien, G. S. Clapp Sur., 3 mi. NW of Rusk; 5,000-ft. test. Loc.

Dallas County

Mauldin Oil Co. No. 1 W. E. Howell, S. Layton Sur., 8 mi. E of Grapevine, 6 mi. W of Longmire. R.U.

Falls County

A. H. Bell et al No. 1 C. L. Trice, F. Mayham Sur., 1 mi. E of Lott. Top Austin 860 ft.; Buda 1,219 ft.; S.D. 1,220 ft.; bailed 15 bbls. oil; W.O.S.R.

Thirteen Oil Co. No. 1 H. R. Roberts, N. Slatter Sur., 6 mi. SE of Lott, Pecan Gap 1,480 ft.; S.D. 2,143 ft.

Fannin County

Joiner & Owens No. 1 Goss-Morgan, J. Stephens Sur., 16 mi. N of Honey Grove. Fsg. 2,810 ft.

Styles & Smith No. 1 R. Stewman, J. W. Clark Sur., 2 mi. SE of Trenton. S.D. 588 ft.; elev. 724 ft.

Hunt County

Penn Oil Corp. No. 1 R. B. Parish, C 100-ac. tr., N. Dauley Sur., 7 mi. NE of Lone Oak. Drk.

Superior Oil Co. No. 1 P. D. Paul, Mary Latham Sur., 4½ mi. NE of Quinlan. Drlg. 5,728 ft.

Texola Land Corp. No 1. J. M. Goin, Jas. Merrick Sur., 2 mi. SW of Wolfe City. S.D. 40 ft.

Kaufman County

Scott & Woodside No. 1 W. and T. Nash, in J. Cortez Sur., 1 mi. E of Scurry. Loc.

Lamar County

Lowery-Cutler No. 1 E. C. Porter, Thos. King Sur. Top Georgetown 354 ft.; S.D. 2,500 ft.

Limestone County

A. W. Phillips et al No. 1 E. M. Speight, M. Herrin Sur., 6½ mi. SE of Mexia. S.D. 3,695 ft.

Pure O. Co. No. 16-T Kendrick, 1,470 ft. southerly SE and 723 ft. westerly SW line of lease, P. Varella Sur. Mexia field. Loc.

Rains County

Humble and Tide Water Oil Co. No. 1 Easter, R. Hotchkiss Sur., 5 mi. NW Alba. Drlg. 8,378 ft.

Red River County

Carpenter Oil Corp. No. 1 J. M. Roberts, J. Ware Sur., 10 mi. NE of Clarksville. Coring 1,165 ft.

Roy I. Carter Drlg. Co. No. 1 J. A. Tutt, C 40-ac. tr. in D. Hart Sur., 2 mi. S of Avery. S.D. 80 ft.

Robertson County

J. E. Mills No. 1 T. Congelosi, G. A. Nixon Sur., 3½ mi. SW of Hearne. S.D. 2,250 ft.; lost hole; skidded rig 40 ft. S.

Titus County

J. Z. Werby et al No. 1 Williams, 2 mi. E of Talco field, M.E.P.R.R. Sur. Drlg. 5,375 ft.

Van Zandt County

American Liberty Oil Co. No. 1 J. A. Freeman, John Walling Sur. Top Woodbine 3,160 ft.; top Paluxy 4,657 ft.; drlg. 4,700 ft.

Humble O. & R. Co. No. 1 L. K. Riggs, 420 ft. S and 200 ft. W of 45-ac. tr., W. Daniels Sur. Deep test. Drk.

Stroud & Lowe No. 1 P. L. McNeill, J. W. Guest Sur., 4 mi. N of Ben Wheeler. Drlg. 1,200 ft.

EAST TEXAS

(Border Counties)

Cass County

Frank DeMayo No. 1 W. D. Chew, Robt. Trammel Sur. Drlg. 4,939 ft.

Gulf Oil No. 4 Dawson, J. H. Rives Sur., NW cor. lse. Drlg. 1,910 ft.

Magnolia Pet. Co. No. 1 Allday Est., P. Evans Sur., SE cor. 87-ac. tr. T.D. 6,035 ft.; perf. and tstg.

Magnolia Pet. Co. No. 7 L. Haywood, P. Evans Sur., SW of No. 3. Drlg. 5,298 ft.

Magnolia Pet. Co. No. 8 L. Haywood, P. Evans Sur., NE of No. 2. Drlg. 4,930 ft.

Magnolia Pet. Co. No. 2 Lewis and Wicks No. 2, Cass Co. Sch. Ld. Sur., NW cor. tr. Drlg. 5,694 ft.

Magnolia Pet. Co. No. 3 Lewis and Wicks, Cass Co. Sch. Ld. Sur., E of No. 2. Drlg. 4,950 ft.

Magnolia Pet. Co. No. 4 Lewis and Wicks, Cass Co. Sch. Ld. Sur. Drlg. 4,277 ft.

Magnolia Pet. Co. No. 5 Lewis and Wicks, Cass Co. Sch. Ld. Sur., E of No. 4. Drlg. 3,603 ft.

Magnolia Pet. Co. No. 6 Lewis and Wicks, Alex Archer Sur. Drlg. 4,300 ft.

Magnolia Pet. Co. No. 7 Lewis and Wicks, Alex Archer Sur. Drlg. 3,434 ft.

Magnolia Pet. Co. No. 1 J. B. McLeod, Cass Co. Sch. Ld. Sur., NW cor. sur. Loc.

Magnolia Pet. Co. No. 8 Meda Green, J. Davenport Sur. Drlg. 3,904 ft.

Magnolia Pet. Co. No. 13 Meda Green, J. Davenport Sur. Drlg. 2,234 ft.

Magnolia Pet. No. 3 W. M. Hall, Wilson Robinson Sur. Drk.

R. W. Norton No. 1 Davis, H. Holbert Sur. Drlg. 4,027 ft.

R. W. Norton No. 2 Davis, H. Holbert Sur., NE cor. Drlg. 2,996 ft.

R. W. Norton No. 3 Davis, H. Holbert Sur. Drlg. 3,460 ft.

Ohio Oil Co. No. 8 Willis, S.F.I.W. No. 1,263 Sur. 7-in. cmtd. 5,954 ft.; W.O.C.S.

Ohio Oil Co. No. 13 R. P. Willis, S.F.I.W. Sur. No. 1,263, Loc.

Ohio Oil Co. No. 14 R. P. Willis, S.F.I.W. Sur. 1,263. 7-in. cmtd. 5,932 ft.; T.D. 5,944 ft.; W.O.C.S.

Ohio Oil Co. No. 18 R. P. Willis, S.F.I.W Sur. No. 1,263, 1,750 ft. W of No. 12 Comp.; flw. 17 B.P.H.; T.D. 5,935 ft.

Phillips Pet. Co. No. 5 Farrier, Wm. R. Myers Sur. Drlg. 5,956 ft.

Phillips Pet. Co. No. 6 Farrier, Wm. R. Myers Sur. Perf. and tstg.; T.D. 6,120 ft.

Phillips Pet. Co. No. 7 Farrier, Wm. R. Myers Sur. Drlg. 5,000 ft.

Phillips Pet. Co. No. 8 Farrier, Wm. R. Myers Sur. Drlg. 2,210 ft.

Texas Co. No. 5 W. M. Hall, A. Archer Sur. Drlg. 6,038 ft.

Texas Co. No. 6 W. M. Hall, A. Archer Sur. Drlg. 5,828 ft.

Texas Co. No. 7 W. M. Hall, Alex Archer Sur., NE cor. lse. Drlg. 3,950 ft.

Texas Co. No. 8 W. M. Hall, Alex Archer Sur., NW cor. lse. Drlg. 3,640 ft.

Texas Co. No. 5 N. A. Rambo, Cass City Sch. Ld. Sur. R.U.

Texas Co. No. 6 N. A. Rambo, Cass County Sch. Ld. Sur. Drlg. 5,735 ft.

Texas Co. No. 8 N. A. Rambo, Cass County Sch. Ld. Sur. Comp.; flw. 370 B.P.D.; T.D. 6,015 ft.

United Prod. Co. No. 2 Bivens Unit, Jas Davenport Sur. T.D. 6,021 ft.; S.D. W.O.

United Prod. Co. No. 3 J. A. Bewley, H. Holbert Sur. Drlg. 5,996 ft.

United Prod. No. 4 J. A. Bewley, H. Holbert Sur. 7-in. cmtd. 5,960 ft.; T.D. 6,000 ft.

United Prod. No. 5 J. A. Bewley, H. Holbert Sur. Comp.; flw. 20 B.P.H.; T.D. 6,005 ft.

United Prod. No. 2-A J. H. Bewley, H. Holbert Sur. 7-in. cmtd. 5,960 ft.; T.D. 5,995 ft.; W.O.C.S.

United Prod. No. 6 G. W. Bibby Unit, Alex Archer Sur. R.U.

United Prod. Co. No. 1 Bostick, J. Coleman Sur. Drlg. 2,385 ft.

United Prod. No. 1 J. Q. Clements, Wm. B. Hughes Sur. R.U.

United Prod. Co. No. 1 Davis Unit, Cass Co. Sch. Ld. Drlg. 4,398 ft.

United Prod. Co. No. 1 J. W. Land, R. Potter Sur., SW cor. 100-ac. lse. Drlg. 4,126 ft.

United Prod. No. 1 R. O. Long, W. Robinson Sur. Drk.

United Prod. Co. No. 1 J. D. Parker, J. Coleman Sur. Drlg. 2,717 ft.

United Prod. No. 1 Terry Unit, R. Potter Sur. R.U.

United Prod. Co. No. 5-A Tyson, J. H. Rives Sur. 5-in. cmtd. 6,021 ft.; T.D. 6,064 ft.; W.O.C.S.

United Prod. Co. No. 6-A Tyson, J. H. Rives Sur. Comp.; flw. 16 bbls. 3 hrs.; T.D. 6,055 ft.

United Prod. No. 1 S. B. Willis, Wilson Robinson Sur. Drlg. 6,035 ft.

United Prod. No. 2 S. B. Willis, Wilson Robinson Sur. No. 908. Comp.; flw. 33 B.P.H.; T.D. 6,037 ft.

United Prod. No. 3 S. B. Willis, Wilson Robinson Sur. No. 908. 7-in. cmtd. 6,005 ft.; T.D. 6,040 ft.; W.O.C.S.

United Prod. No. 4 S. B. Willis, W. Robinson Sur. R.U.

United Prod. No. 5 S. B. Willis, W. Robinson Sur. R.U.

Vaughn Prod. Co. No. 1 Willis, S.F.I.W. Sur. 1263. Loc.

Vaughn Prod. Co. No. 2 Willis, S.F.I.W. Sur. 1263. R.U.

Harrison County

Geyer Oil Co. No. 1 Alex Moore, 5 mi. SW of Waskom, C. W. Fields Sur. W.O.S.R.

H. H. Roberts et al No. 1 Z. Douglas, F. Fields Sur. T.D. 2,485 ft.; prep. for prod. test.

Marion County

Arkansas-La. No. 1 W. S. Ford, Charles Grayson Sur., NE cor. Ford 204-ac. tr Rg. 7-in.; T.D. 6,351 ft.

Arkansas-La. No. 1 Laura McIntosh, Edmondson Sur. 10-in. 2,015 ft.; W.O.C.S.; T.D. 2,156 ft.

Bauman, Dunn & Fischer No. 1 Chatten, A. D. S. Coy Sur., SE cor. R.U. and S.D.

Sam Lanier No. 1 Lucey Rives, SE cor. M. G. Wall Sur. T.D. 960 ft.; W.O.S.R.

Morefield & Prince No. 1 Benefield, NE cor. Robt. Potter Sur., 4 mi. W of Oil City, La. P.B. to 945 ft.; W.O.C.S.

Holcomb & Thomason No. 1 Lizzie Henderson, 330 ft. S and E. cor. Blk. 18, of Lizzie Henderson Subd., or 2,800 ft. S 2,450 ft. E of NW cor. of R. Bennington Sur. Cmtd. off gas through perf. W.O.C.S.

Panola County

Matex Oil Co. No. 1 Thomas M. Alstone, 3 mi. E of Elysian field. T.D. 5,036 ft.; trying to run packer.

Sabine County

L. B. House et al No. 1 Bell, D. McDonald Sur. Drlg. 2,442 ft.

Shelby County

Wm. Redditt No. 1 Pickering Lbr. Co., SE cor. Stephens English Sur. S.D. 2,100 ft.; fuel.

H. A. Stebbinger No. 1 Pickering Lbr. Co., on 160-ac. tr. in A. Hanson Sur. Drlg. 4,245 ft.

NORTH TEXAS WILDCATS

Archer County

Golding & Cochran No. 1 Wilson, sec. 31, A.T.N.C.L. Sur. Loc.

Hammond Oil Co. No. 1 Powell, H. A. Allen Sur. A-3. Drlg. 1,603 ft.

J. T. Miller No. 1 S. B. Herron, sec. 4, Clark & Plumb Sur. Drlg. 987 ft.

J. A. Self No. 1 Symank, sec. 11, L. & M. Pasture. 6⅝-in. 1,420 ft.; S.S.O. 1,421-35 ft.; testing.

E. J. Stump No. 1 Wilson B, sec. 1, B.B. B.&C. Sur. A-39. Drlg. 3,775 ft.

Clay County

J. G. Steele No. 1 Andrews, R. Rainey Sur. A-354. Loc.

Green Mt. Oil Co. No. 1 Stagga, sec. 34, A.C.S.L. Sur. Spudding.

R. N. Hamilton No. 1 Fred Wines, sec. 4, H. Dixon Sur. A-106. Drlg. 260 ft.

G. T. Morris No. 1 Boddy, T. Cook Sur. Drlg. 1,375 ft.

Collin County

Sorrell et al No. 1 D. R. Clark, J. Rowland Sur. Spudded and S.D.

Cooke County

Wm. D. Compton No. 1 P. Tucker, J. Barnett Sur. A-42. Drlg. 1,025 ft.

Denver P. & R. Co. No. 1 Solomon, W. G. Hunt Sur. A-493. Loc.

B. H. Hilburn No. 1 W. A. Harris, J. Harris Sur. A-502. S.D.O. 1,720 ft.

Peterson et al No. 1 J. M. Floyd, Chas. DeMorse Sur. A-305. S.D.O. 350 ft.

Ruble & Lowery No. 1 Dozier, Lot 12, F.C. S.L. Sur. Drlg. 1,830 ft.

United Producers Co. No. 1 J. G. Jones, L. S. Blair Sur. A-188. Drlg. 1,301 ft.

Denton County

Bolivar Drlg. Co. No. 1 Bentley, J. Yoakum Sur. A-1,443. R.U.R.

Carlysle & Wilson No. 1 J. P. Knox, B. Howard Sur. A-542. Gas sd. 1,950-55 ft.; est. 10,000,000 ft.; rng. 5 3/16-in. at 1,950 ft.; tstd. 1,750,000 ft. gas; S.D.O.

H. Culver No. 1 Waide, J. Chisum Sur. A-278. Loc.

J. C. Foster No. 1 Jeffcoat, J. West Sur. S.D. 2,262 ft.

Oil Finance No. 1 J. S. Gambill. Drlg. 1,600 ft.

Ruwaldt & Martin No. 1 Joe S. Gambill, J. B. January Sur. A-658. Drlg. 130 ft.

Grayson County

F. Gailbreath et al No. 1 Singletary, Chas. Quillian Sur. A-989. 6⅝-in. csg. 3,146 ft.; P.B. to sd. 3,862-75 ft.; S.D.O.

Red Wing Oil Co. No. 1 Mulder, J. Barefoot Sur. S.D.O.

Olson et al No. 1 D. R. Ulteer, P. P. Cady Sur. A-301. Drlg. 4,200 ft.

Pete Shanor No. 1 Blair. Sd. 3,190-3,200 ft.; tstd. wtr.; S.D.O.

Hardeman County

Locke & Durham No. 1 Schoppa, sec. 57, H.&T.C. Sur., Blk. 16. Drlg. 140 ft.

Jack County

Carpenter Oil Corp. No. 1 Johnson, R. Parker Sur. A-461. R.U.S.

Danciger O. & R. Co. No. 1 Kinder, B.S.&F. Sur. A-83. Drlg. 2,160 ft.

S. B. Edwards No. 1 Williams, J. M. Ross Sur. A-992. R.U.R.

Hamilton Pet. Co. No. 1 J. S. Rhodes, Wm. Orr Sur. A-849. S.S.O. 2,362 ft.; C.O. and testing.

L. Hedrick No. 1 Brown, S. M. Holderness Sur. A-1,532. Drlg. 1,000 ft.

Mrs. D. P. Jack No. 1 Hardy, T.E.&L. Sur. No. 2,555. Drk.

C. D. Neff, Tr., No. 1 Moore, S.P.R.R. Sur., sec. 7. Loc.

Sam Shabay No. 1 J. S. Callis, S.P.R.R. Sur. A-575. Drk.

Tillman et al No. 1 Jones, J. Helmstutter Sur. No. A-1,269. Drk.

Montague County

Denver P. & R. Co. No. 1 Copeland, Blk. 162, Kembro Sur. Drlg. 1,005 ft.

Edgar T. Hart No. 1 W. L. Davis, sec. 12, Jack Co. Sch. Ld. S.D. 1,100 ft.

Montague Oil Co., Inc., No. 1 W. J. Bell, Sec. 2,882, T.E.&L. Sur. R.U. to drill old 3,500-ft. well to 6,000 ft.

Ventex Investments, Ltd., No. 1 S. E. Bell, sec. 11, M.E.P.&P. Sur. Drlg. 1,601 ft.

Throckmorton County

R. J. Williams No. 1 W. B. Parrott, T.E. &L. Sur., sec. 961. S.D.O. 2,520 ft.

Wichita County

H. W. Barton, Jr. No. 1 W. B. Honaker, R. Meade Sur. A-185. Drlg. 1,080 ft.

Christie et al No. 1 Vanmeter, Blk. 35, K.W.V.F.L. Sur. R.U.R.

Humble O. & R. Co. No. 1 Norman, H.& G.N. Sur., sec. 25. Spudding.

Humble O. & R. Co. No. 3 Parker, sec. 25, H.&G.N. Sur. Drlg. 600 ft.

King Oil Co. No. 1 R. W. Porter, sec. 32, H.&T.C. Sur. Drlg. 1,806 ft.

Leo Oil Co. No. 1 Fonville, sec. 323, Waggoner Co. Sur. R.U.R.

Petroleum Prod. Co. No. 73 First National Co., Blk. 29, K.W.V.F.L. Sur. Drlg. 2,020 ft.

United Prod. Co. No. 1 J. T. Harrell, Blk. 9, Denton Co. Sch. Ld. Sur. Drlg. 1,100 ft.

Wilbarger County

Bason Drlg. Co. No. 1 Waggoner, sec. 2, H.&T.C. Sur., Blk. 4. 6⅝-in. cem. 2,323 ft.; W.O.C.

Gibson & Jennings No. 1 Waggoner, sec. 109, H.&T.C. Sur., Blk. 14. Loc.

F. A. Lain No. 1 J. Coffee, sec. 44, H.&T.C. Sur. C.W.D.D.; cellar.

E. C. Lawson No. 1 Waggoner, sec. 103, H.&T.C. Sur. Drlg. 1,005 ft.

Peery Oil Co. No. 1 King, sec. 44, H.&T.C. Sur., Blk. 13. Drlg. 1,300 ft.

L. Webb No. 1 Waggoner, sec. 49, H.&T.C. Sur., Blk. 2. Spudded.

Wise County

Latex Oil Co. No. 1 Smith, J. Couch Sur. Material.

Texas-Canadian Dev. Co. No. 1 T. N. Maxwell Isham Epps Sur. A-267. Drlg. 3,195 ft.

Young County

S. Caprito No. 1 Laquay, A. Irvin Sur. A-1,779. Loc.

Collins & Fitzwater No. 1 J. G. Castleman, sec. 72, T.E.&L. Sur. Spudded.

Helmerich & Payne No. 1 J. H. Rubenkoenig, J. Poitevent Sur. 9-227. S.S.O. 4,205-30 ft.; C.O. and testing.

J. E. Kadane No. 1 B. F. Manley, T.E.&L. Sur. 2,128. Drk.

A. T. Strong No. 1 M. K. Graham, T.E.&L. Sur. 3,410. Drlg. 300 ft.

R. H. Vise No. 1 Dollins, T.E.&L. Sur. 615. Drlg. 3,708 ft.

C. V. Welch No. 1 Street, M. E. Criswell Sur. A-1,772. Fsg. 1,040 ft.

Yorktex Pet. Co. No. 1 F. G. Burnett, G. W. Hills Sur. A-151. Treated with acid 4,020-80 ft.; swbg. acid from hole; showing wtr.; tstg.

Yorktex Pet. Co. No. 1 W. E. Steele, L.R.R. Sur. A-156. Drlg. 280 ft.

WEST TEXAS WILDCATS

Andrews County

Botkins & Barron No. 1 Kemp. Loc.

H. S. Forgeron et al No. 1 Lockhart & Brown, C NE¼ sec. 20, Blk. A-41, P.S.L. Sur. Loc.

G. F. Getty, Inc., No. 1 R. H. Lindley, sec. 8, Blk. A-46. T.D. 4,642 ft.; R.U. pumping equipment; oil 31.37 grav.

Geo. F. Getty No. 1 Moxley. T.D. 4,802 ft. C.O.

Hannigan No. 1 Lotus Oil Co., sec. 18, Blk. A-48, P.S.L. Sur. Drlg. 286 ft.

R. H. Henderson No. 1 J. E. Parker, sec. 35, P.S.L. Sur. A-43. T.D. 4,555 ft.; S.D.

Humble O. & R. Co. No. 1-B J. S. Means, 460 ft. from N and W, sec. 11, Blk. A-45, P.S.L. Sur. R.U.

Shell Pet. Corp. No. 1-E F. King, sec. 10, Blk. A-42, P.S.L. Sur. T.D. 4,275 ft.; testing.

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur.; T.D. 1,915 ft.; U.R. csg.

Crane County

Clark et al No. 1 Jordan, sec. 12, Blk. B-22, P.S.L. Sur. T.D. 3,750 ft.; shot; C.O.

Gulf Oil Corp. No. 2 McKnight, sec. 9, Blk. B-21. Drlg. 4,256 ft.

J. Hertz No. 1-A Hughes, sec. 101. Drlg. 2,170 ft.

Sinclair Prairie Oil Co. No. 1 University, sec. 13, Blk. 35. Drlg. 480 ft.

Crockett County

Superior Oil Co. of Calif. No. 1 J. S. Todd, C SE¼ sec. 55, Blk. UV, G.C.&S.F. Sur. M.I.R.

Ector County

Bond & Harrison No. 1 Rumsey, sec. 35, Blk. 45, Twp. 1n, T.&P. Sur. Drlg. 2,878 ft.

Sinclair Prairie Oil Co. No. 2-A Johnson, sec. 48, Blk. 43, Twp. 1s, T.&P. Sur. T.D. 4,345 ft.; P.B. 4,173 ft.; shot; C.O.

Edwards County

Dan Auld et al No. 1 Rigsby, sec. 16, Blk. OK, G.C.&S.F. Sur., 15 mi. NE of Rock Springs. Spudded.

Fisher County

L. A. Daniels et al No. 1 J. J. Nicklesa. Drlg. 2,800 ft.

Forrest Dev. Co. No. 1 J. A. Scott, sec. 105, Blk. 2, H.&T.C. Sur. R.U.R.

Martin & Brubaker No. 1 Brown, W. E. Richardson Sur., sec. 4, Blk. R. Drlg. 2,035 ft.

Southern Oil Co. No. 1 Robinson, sec. 172, Blk. 2, H.&T.C. Sur., 2¼ mi. NE of Raton. T.D. 2,147 ft.; U.R. csg.

Gaines County

Landreth Prod. Co. No. 1 C. Cobb, sec. 20, Blk. A-21. Drlg. 2,000 ft.

Garza County

S. Caprito No. 1 Post Estate, sec. 230, Blk. 5, K. Aycock Sur. S.D. 150 ft.

Glasscock County

Fleetborn Oil Co. No. 1 Black Arrow, sec. 3, Blk. 34, Twp. 3s, T.&P. Sur. T.D. 1,883 ft.; U.R. csg.

Shell Pet. Corp. No. 1 McDowell, sec. 41, Blk. 34, Twp. 2s, T.&P. Sur. Drlg. 3,062 ft.

Hockley County

Texas Co. No. 1 B. Slaughter, Labour 83, League 38, Zavala Co. Sch. Lds. T.D. 4,443 ft.; U.R. csg.

Howard County

R. A. Westbrook et al No. 1 G. T. West, sec. 48, Blk. 33, Twp. 1n, T.&P. Sur. S.D. 1,460 ft.; blowing 100,000,000 ft. air daily.

Hudspeth County

Haymon Krupp Oil & Ld Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp. 6. Drlg. 2,800 ft.

Jones County

H. D. Egger et al No. 1 O. Roberts, sec. 26, Orphan Asylum Lds. Drlg. 2,226 ft.

Fain-McGaha, Inc., et al No. 1 Lotspeick, sec. 40, Blk. 15, T.&P. Sur. Fsg. 1,837 ft.

Fain-McGaha, Inc., No. 1 Lewis et al, sec. 37, Blk. 15, T.&P. Sur. S.D. 1,525 ft.

Fain & McGaha No. 1 Swenson, 200 ft. from N and W, sec. 2, A. D. Norcop Sur. Drlg. 200 ft.

Hugh King, Jr., No. 1 Harris, D. H. Stover Sur. No. 7. Drlg. 1,235 ft.

Martin & Son No. 1 Hayden, 200 ft. from S and W of 57¼-ac. tract, Subd. 5, Lot 2, Martinez Sur. R.U.M.

McMann et al No. 1 Dyer sec. 12, Blk. 2, S.P.R.R. Sur. Machine.

Oyster & Griffith No. 1 Bumpass, A. Jones Sur., 3 mi. SW of Truby. S.D. 2,556 ft.

J. L. Reeves No. 1 Kelly, C. Martinez Sur. 1½ mi. N of Hawley. T.D. 2,251 ft; P.B. 2,225 ft.; C.O.

T. K. Simmons No. 1 E. A. Hicks, sec. 5, O.A. Lands Sur. T.D. 2,045 ft.; U.R. csg.

Snoddy & Snoddy No. 1 Harvey, sec. 9, Blk. 14, T.&P. Sur., 9 mi. S of Leuders. T.D. 1,630 ft.; shut in.

Ungren & Frazier No. 1 J. J. Steele, sec. 11, Blk. 15, T.&P. Sur. T.D. 2,304 ft.; U.R. csg.

Loving County

Mason Oil Co. No. 3 Kyle, 2,310 ft. from N and W of sec. 20, Blk. 55, Twp. 1, T.&P. Sur. M.I.R.

Nolan County

Dr. Robinson Co. No. 1 E. Gabler, sec. 26, Blk. X, T.&P. Sur. Drlg. 3,527 ft.

Pecos County

Bahan & Rhodes No. 1-B Bonebrake, sec. 116, Blk. 8, H.&G.N. Sur. T.D. 2,290 ft.; fsg.

Hightower Oil Corp. No. 1 Holmes, sec. 6, Blk. C-3, E.L.R.R. Sur. T.D. 2,453 ft.; straightreaming.

Humble O. & R. Co. No. 1 E. M. Gray, sec. 94, Blk. 11, G.H.&S.A. Sur.; 5,000-ft. test. Fsg. 1,160 ft.

Humble O. & R. Co. No. 1 J. Tippett, Sur. 6,217 ft. from S and 330 ft. from W, sec. 538, Arnold & Bennett Sur. R.U.S.T.

Lee Pet. Corp. et al No. 1 J. L. Nutt, sec. 1, W. D. Henley Sur. Drlg. 2,081 ft.

E. R. Minshall, No. 1 Banker, sec. 25, Blk 146, T.&St.L. Sur. T.D. 2,315 ft.; pulling pipe.

Pinerock Oil Co. No. 1 White & Baker, SE cor. sec. 5, Blk. 207, T.C. Sur. Spd. and S.D.

S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. 4,480 ft.

Union Oil & Mining Co. No. 1-A Magnolia, sec. 5, Blk. 9, H.&G.N. Sur. T.D. 1,506 ft.; M.I.M.

Young No. 1 Bailey, sec. 23, Blk. 178, T.C. R.R. Sur. S.D. 1,900 ft.; running pipe.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. Crooked hole 170 ft.

A. H. Main No. 1 Greenlee, sec. 40, Blk. 347, 13 mi. NE of Marfa. Machine.

Reagan County

Bahan & Rhodes No. 1 Kloh, sec. 37, Blk. 37, Twp. 5s, T. & P. Sur., NW cor. of county. Drlg. up bailer 3,005 ft.

Reeves County

Grisham & Hunter No. 1 Montgomery, sec. 1, W.R. King Sur. Drlg. 1,201 ft.

J. C. Hill et al No. 1 Ely, 1,320 ft. from N and W, sec. 38, Blk. 71, P.S.L. Sur. Loc.

Schleicher County

J. M. Cooper No. 2 Page. Loc.

Mangus Oil Co. No. 1 Judkins & Spencer, C SW¼ sec. 4, W. W. Russell, grantee. Elev. 2,209 ft.; T.D. 6,527 ft.; P.B. 5,912 ft.; shot 145 qts. from 5,814-5,920 ft.; C.O.

Scurry County

Bristow & Cantrell No. 1 Tomlinson, sec. 122, Blk. 97, H.&T.C. Sur. Drlg. 500 ft.

Taylor County

Superior Oil Co. of Tulsa No. 1 Cook Hrs. Drlg. 4,072 ft.

Terrell County

Ohio Oil Co. No. 1 M. H. Goode, sec. 26, Blk. 161, G.C.&S.F. Sur. Drlg. 8,770 ft.

Terry County

W. L. Pickens et al No. 1 Lewright, sec. 1, Blk. C-37, P.S.L. Sur. T.D. 4,590 ft.; drlg. plug.

Upton County

J. H. Myles & Son No. 1 Hughes, sec. 91, Blk. Y, G.C.&S.F. Sur. Drlg. 1,021 ft.

Dan Short No. 1 Webb, sec. 174, Blk. E, C.C.S.D.&R.G.N.G. Sur. S.D. 875 ft.

Ward County

Magnolia Pet. Co. No. 1-55 Sealy, 2,310 ft. from N and 330 ft. from E, sec. 55, Blk. F, G.M.M.B.&A. Sur. M.I.M.

L. F. White et al No. 1 Rector-Monroe, E cor. sec. 3, Blk. 1, W.&N.W. Sur. M.I.S.T.

Wood et al No. 1 Boogher, sec. 8, Blk. 32, H.&T.C. Sur. Drlg. 2,080 ft.

Winkler County

Read & Duffey No. 1 Sealey, sec. 8, Blk. A, G.M.M.B.&A. Sur. S.D. 4,520 ft.

Richardson No. 1-B Walton, sec. 20, Blk. 77, P.S.L. Sur. R.U.S.T.

J. R. Sharp No. 1 Walton, sec. 19, Blk. 77, P.S.L. Sur. Drlg. 2,827 ft.

York & Harper et al No. 1 Gunter & Munson, sec. 7, Blk. C, G.M.M.B.&A. Sur. Drlg. 2,380 ft.

Yoakum County

Bahan et al No. 1 Shook Est., sec. 420, Blk. D, John H. Gibson Sur. Loc.

RANGER (CENTRAL TEXAS) DISTRICT

Callahan County

Canyon O. & G. Co. No. 1 J. O. Kidd, R. A. Pennell Sur. No. 755, 4 mi. NW Cross Plains. Fsg. 400 ft.

A. R. Forster No. 1 C. B. Snyder, NW cor NE¼ county, sec. 139, B.B.B.&C. Sur. Spdg.

Coleman County

Anzac Oil Corp. et al No. 1-H Morris, 13 mi. NE Coleman, J. Harris Sur. No. 77. Drlg. 2,100 ft.

Midfield Oil Co. No. 1 T. H. Ward, sec. 274, W. Echels Sur. S.D.O. 1,500 ft.

Eastland County

J. T. Anderson No. 1 Crist, 8 mi. N of Rising Star, sec. 36, Lavaca Co. Sch. Lds. Spudded and S.D.

F. J. Estes No. 1 Gentry, A. Popejoy Sur. S.D. 2,500 ft.

Hoffman & Page No. 1 Dodd, 5 mi. S of Ranger, Subd. 11, William VanNorman Sur. Machine.

States Oil Corp. No. 1 H. S. Schmick, 1 mi. NE Eastland, SE¼ sec. 1, H.&T.C. Sur., Blk. 4. Drlg. 150 ft.

Hamilton County

Seaboard Oil Co. No. 1 fee, A. C. Grimes Sur., 10 mi. N of Huntington. Top Ellenberger 4,144 ft.; T.D. 4,348 ft.; S.D.O.; struck wtr.

Palo Pinto County

D. H. & C. Drlg. Corp. No. 1 Davenport, 6 mi. SE Palo Pinto, L. F. Margaret Sur. A-309. T.D. 2,000 ft.

Paul Garrett No. 1 Mabry heirs, NE cor. county, sec. 2,572, T.E.&L. Sur. S.D. 649 ft.

W. K. Gordon et al No. 2 Canty, 8 mi. W Palo Pinto, 1,150 ft. from S and 350 ft. from W of SE¼ sec. 42, T.&P. Sur., Blk. 2. Drlg. 150 ft.

Shackelford County

Danciger & Pearson No. 1 Swenson, 2 mi. NW Morris-Buie pool, Williams Sur., Abst. 1,543. T.D. 1,583 ft.; U.R. csg.

Danciger O. & R. Co. No. 1 McCowan, NW cor. county, 220 ft. from E and 1,036 ft. from S lines sec. 158, B.B.B.&C. Sur. Drlg. 310 ft.

Dean Bros. et al No. 1 Newell C, sec. 87, E.T.R.R. Sur., 1 mi. SW Cook pool. S.D. 300 ft.

Green, Jones & Stasney No. 1 Davis, 7 mi. S. Morris-Buie pool, sec. 29, T.&P. Sur., Blk. 13. Drlg. 1,550 ft.

Iron Mountain Oil Co. No. 1 Ivy, NW cor. county, sec. 159, B.B.&C. Sur. Drlg. 1,175 ft.

Jones, Stastney, Groover & Rose No. 1 Davis, 4 mi. S Morris-Buie pool, 220 ft. from S and W of SE¼ of NE sec. 10, T.&P. Sur., Blk. 13. Loc.

Frank Oyster et al No. 1 J. C. Swenson, 7 mi. N Morris-Buie pool, C SE¼ of NW¼, sec. 14, A.B.&M. Sur., Abst. 780. Drlg. 1,018 ft.

Reliance Oil & Roy. Co. No. 15 G. R. Davis, sec. 6, T.&P. Sur., Blk. 13, 4 mi. S of Bluff Creek pool. Drlg. 1,670 ft.

Ungren & Frazier No. 1 McCowan, NW cor. county, sec. 158, B.B.B.&C. Sur. Drlg. 720 ft.

Ungren & Frazier et al No. 1 Snyder, 3 mi. SW Sedwick, sec. 26, L.A.L. Sur. Ellenberger test. Cg. L. 2,092 ft.

Stephens County

Aarco O. & G. Co. No. 1 Atkins, 2¼ mi. E Crystal Falls, 2,196 ft. from S, 330 ft. from W of sec. 1,129, T.E.&L. Sur. Loc. for 4,000-ft. test.

C. B. Christie et al No. 1 E. S. Maury, 4 mi. W of Crystal Falls, J. Koehler Sur., Abst. 26, S.D. 3,600 ft.; rig burned.

W. T. Garret et al No. 1 Echols, 6 mi. SE of Ivan, W½, sec. 10, Blk. 3, S.P.R. R. Sur. T.D. 3,325 ft.; C.O.; S.D.

Hanrahan & Bedingfield No. 1 Guest, 2 mi. NW Frankell, sec. 30, T.&P. Sur., Blk. 6. Spud. and S.D.

Mudge Oil Co. No. 1 S. H. Hill, 3 mi. SW Eliasville, 1,160 ft. from S and 720 ft. from W lines, sec. 1,122, T.E.&L. Sur. Spdg.

Tarrant County

E. E. Hoffpauir et al No. 2 W. H. Davis, 2 mi. S Arlington, H. Blackwell Sur. T.D. 1,915 ft.; fsg. drill pipe.

Taylor County

Hal Hughes et al No. 1 Manahan, 5 mi. S Abilene, sec. 14, L.A.L. Sur. R.U.

Throckmorton County

R. J. Williams et al No. 1 W. B. Parrott, 4 mi. NW of Woodson, sec. 961, T.E.&L. Sur. S.D. 2,612 ft.

Wise County

Latex Oil Co. No. 1 Smith, 3 mi. E Bridgeport, Jas. Couch Sur., Abst. 104. Drlg. for 4,200-ft. test. Moving in rotary.

Texas-Canadian Dev. Co. No. 1 T. N. Maxwell, NE cor. county, Isham Epps Sur. Drlg. 3,560 ft.

Canadian Fields

(Continued from Page 90)

H. V. O'Connor, all of Calgary. Anaconda Oil Co. of Calgary has arranged for a test to be started before June 1 in LSD 11, same section.

In the west central area, south and west of Dalhousie Oil Co. No. 8, North American Petroleums, Ltd., will drill No. 1 in LSD 10, section 5-19-2w5, on acreage formerly held by Calgary & Edmonton Corp. Test will start within three months. Organizers of the company are John Russell, D. G. Mackenzie and O. C. Arnott. Del Bonita Associated Oils, Ltd., which has a test in the lime on the South Twin River structure in southern Alberta, has subleased LSD 14, section 6-19-2w5, with option on LSD 13 from Okalta Oils, and will start No. 2 well within three months.

Drilling in Ontario

In the Dover field, Kent County, Ontario, Central Pipe Line Co. No. 1, Jubenville farm, has deepened to about 215 feet in the Trenton limestone. In addition to increased gas flow, it is spraying considerable oil, and will be drilled in and production tested.

In Chatham Township, Kent County, Union Gas Co. No. 7, Lot 11, Concession 12, is below 1,150 feet. Union No. 8, Lot 12, Concession 12, is below 800 feet. Ogletree Syndicate No. 2, Lot 13, Concession 5, is below 2,930 feet after getting the Trenton limestone at about 2,910 feet.

In the Tilbury field, Kent County, Perdue Syndicate No. 1, J. H. Williams farm, Lot 3, Concession 8, Tilbury East Township, is being treated with 1,000 gallons of acid. A natural production of 20 bbls. was reported at 1,435 to 1,447 feet. McNamara Construction Co. No. 1, Lot 5, Concession 10, finished around 1,435 feet, is also being given acid treatment.

In the old Petrolia field, Lambton County, McIntosh Oil & Gas Co. has cleaned out one old well and is cleaning a second, and has drilled two new wells. Two wells are being treated with 500 gallons of acid each.

In Perth County, E. F. Coste and associates No. 1, James Chalmers farm, in North Easthope Township near Amulree, is spudding as a test for gas with the potential horizon between 1,400 and 2,000 feet.

Research Committee

The fundamental research on occurrence and recovery of petroleum work of the American Petroleum Institute will be directed during 1937 by E. G. Gaylord of the Standard Oil Co. of San Francisco. His aides include F. R. Clark, Ohio Oil Co.; C. V. Millikan, Amerada Petroleum Corp.; R. B. Roark, Shell Petroleum Corp., all of Tulsa; A. W. McCoy, Ponca City; K. B. Nowells, Forest Production Co., Nowata; Carl A. Young, American Petroleum Institute, and F. H. Lahee, Sun Oil Co., both of Dallas; T. V. Moore, Humble Oil & Refining Co., Houston; F. E. Wood, Standard Oil Co. (Indiana), Chicago; K. C. Heald, Gulf Oil Corp., Pittsburgh; W. B. Heroy, Consolidated Oil Corp., and W. C. Shutts, Standard Oil Development Co., both of New York City; R. D. Reed, Texas Co., and A. C. Rubel, Union Oil Co., both of Los Angeles.

PERSONAL

A. O. PEGG, superintending engineer of Union Oil Company marine department, has just been appointed vice chairman of the Pacific Coast marine section of the National Safety Council. The appointment is largely in recognition of his services as a member of the committee that some time ago drafted regulations for the United States Steamboat Service. He was Pacific Coast representative on that committee.

HARRY SNYDER, of Chicago, accompanied by CHARLES LABINE, president of Eldorado Gold Mines, Ltd., left Edmonton, Alberta, recently by airplane for a two weeks' holiday in the Great Bear Lake mining region. Mr. Snyder is connected with refining enterprises in Montreal, Quebec, and Chicago.

J. DUDLEY CLARK, capitalist and oil operator of Boston, Mass., has been in the Shreveport-Rodessa, Louisiana, territory looking after business matters for the past week.

JACK W. MALSEED has been appointed chairman of the reception committee for the annual banquet of the Bilge Club, fraternity of maritime executives, to be held at the Biltmore Hotel in Los Angeles, Calif., April 3.

RAY F. BAKER, chief geologist of Colombian Petroleum Company, and in charge of foreign geological work for the Texas Corporation, sailed from New York February 27 for Colombia. MRS. BAKER accompanied her husband.

F. E. McCLAREN has been appointed general sales manager of the Seaside Oil Company, and CLINTON N. COLLINS, formerly supervisor of the Southern California district, has been appointed assistant general sales manager.

P. G. TRIPPETT, president of the General American Oil Co. of Shreveport, La., has sold the majority of his holdings in that company to J. W. GILLILAND of Shreveport. Mr. Trippett will continue with the company as director.

FRED WOOD of Tulsa, with the land department of Continental Oil Company, has been made an honorary member of the Ponca tribe of Indians. His Indian name is SHEA-GEA-THEA. CHIEF HORSE EAGLE signed the certificate of membership.

DR. F. P. SHEPARD, University of Illinois, Urbana, Ill., was guest speaker before the Tulsa Geological Society on the evening of March 1. His subject was "Submarine Canyons Related to Salt Domes," covering results of recent surveys of the Atlantic, Gulf and Pacific Coasts.

FRANK GRAVIS, Southwest Texas oil operator, returned to his home in San Antonio, Tex., last week after a business trip in New York City. With him came LEO DWANN, representing a French concern interested in oil development in Southwest Texas.

W. A. BAKER, who joined Shell Oil Company in 1927 as an assistant in the head office accounting department in San Francisco, Calif., and who since 1933 has been assistant comptroller of Shell Petroleum Corporation, has been appointed comptroller of that company.

MR. and MRS. R. S. PRINGLE and MR. and MRS. T. P. THOMPSON, of Bradford, Pa., are spending part of the winter in Florida. Mr. Pringle and Mr. Thompson are prominently engaged in the oil business in the Eastern fields. ROBERT ROY, also a Bradford oil producer, and MRS. ROY, are taking the waters at Mineral Wells, Tex.

C. C. ROSS, former minister of lands and mines for Alberta, recently spent a few days in Toronto, Ontario, and Montreal, Quebec.

HEBER MARTIN, formerly with a supply company at Kermit, Tex., is now manager of the new store of the Iverson Tool Company at Odessa, Tex.

E. G. THOMPSON, codiscoverer of the Talco field in Titus County, Texas, addressed the Dallas Petroleum Geologists in that city recently. He gave a detailed subsurface interpretation of the Talco field.

JAMES F. McMANMON has returned to Tulsa from Enid, Okla., and has opened offices in the National Bank of Commerce Building. He has been an independent oil operator in the Mid-Continent field for the past 15 years.

K. L. SAPPINGTON, division production manager, J. B. BUSH, chief exploitation engineer; J. R. JONES, subsurface geologist, and six other employes of the production department of the Shell Petroleum Corporation, will move from Wink to Midland, Tex., where this department is moving its offices. The company has had its land and geological offices in Midland for the past two years.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

The Bird Creek field, north of Tulsa, is the busiest field in the Mid-Continent, with good sized wells at shallow depths. Sixty-seven wells were completed there in January.

The Midway-Sunset field in California is the leading producing field in the United States with 87,000 barrels per day.

William Hanley, Bradford, Pa., oil producer, received word that a 2,000-barrel well has been completed, adjoining his 17,500-acre property in the Salt Creek field in Wyoming. Mr. Hanley has owned the acreage 18 years but never drilled on it.

20 YEARS AGO

The Atlantic Petroleum Corporation has been organized in Tulsa, with a capital of $7,000,000. Henry N. Greis is president. The Curtis & Aiken properties and the Burke-Hoffield Company are included in company's possessions.

Five oil sands have been discovered in the Healdton, Oklahoma, field, from 870 feet down to 1,132 feet.

Haverhill Petroleum Company opens the Smock pool in Butler County, Kansas.

Two gas flares on the outskirts of Los Angeles, Calif., have been burning night and day for 30 years.

Motor gasoline to the consumer in the New York district sells for 26 cents to 33 cents per gallon, according to gravity. There is no tax.

10 YEARS AGO

Experiments of back pressure on oil wells have in some cases resulted in fairly low gas-oil ratios, writes S. F. Shaw.

The deepest producing well in the Mid-Continent area is Roxana Petroleum Corporation and Skelly Oil Company's No. 1 Brunkin, in Garfield County, Oklahoma. It is 6,210 feet deep and still drilling.

DARWIN BENEDUM and J. C. BENEDUM, geologists, have opened offices in San Antonio, Tex.

W. B. HOOKER, of Regina, Saskatchewan, was in Calgary, Alberta, recently attending a directors' meeting of the Rockland Oil Company.

BEN E. LINDSLY, engineer with Securities Exchange Commission, Washington, D. C., is a visitor in the Mid-Continent region and is in Tulsa this week.

J. C. HUNTER of Abilene, Tex., will head the West Central Texas Oil and Gas Association this year, succeeding PAUL PITZER of Breckenridge as president.

A. I. LEVORSEN, of Tulsa, and MRS. LEVORSEN are sailing from New York to Los Angeles via the Panama Canal. They will attend the A.A.P.G. convention, which opens March 12.

F. W. FREEBORN, JR., formerly in the production and engineering department of the Tide Water Oil Company, is now associated with the Adams Louisiana Company in charge of production for the company. His headquarters will be in Houston, Tex.

ELLIOTT ROOSEVELT of Fort Worth, Tex., and JAMES ROOSEVELT of Washington, D. C., have gone into the oil business, having acquired leases in the West Texas field which they expect to explore and develop in this year's increased activity in that part of the Lone Star state.

RAY AUSTIN, district manager, Dowell, Inc., opened the Shelby, Mont., branch on March 1 and will have added to his territory a new station located in northern Wyoming and another in Turner Valley field, Canada. DALE DUBLIN is being transferred from Great Bend, Kans., to the Wyoming station.

PARAGRAPHS

G. E. DORSEY, foreign production superintendent for Socony-Vacuum Oil Company, Inc., was absent from his New York office last week on a business trip.

C. J. HAAS, of Overton, Tex., has become associated with the Adams Louisiana Company's and Felmont Corporation's development in their newly found field near Patoka, Ill., and will have headquarters at the Evans Hotel at Vandalia, Ill.

K. L. SAPPINGTON, division production manager of the Shell Petroleum Corporation, Midland, Tex., has been elected chairman of the newly organized Permian Basin chapter of the Production Division of the American Petroleum Institute. G. A. POOL, Gulf Oil Corporation, Odessa; HUGH JOHNSTON, Continental Oil Company, Hobbs N. Mex.; BEN LeFEVRE, American Maracaibo, Big Spring; and L. E. SHIPLET, Wink, were named vice chairmen. Six men who will serve as an advisory committee for one year, are: T. B. SUDDERTH, Hobbs; T. E. KEEFER, Wink; L. A. NEAL, Hobbs; J. W. JORDAN, Midland; EARL P. GRIFFIN, Midland, and F. E. HATFIELD, Odessa. Those elected for the two-year term are: HARVEY HARDISON, Midland; GLENN VICK, Hobbs; H. B. HURLEY, Big Spring; W. T. DOHERTY, Midland, W. E. CUNNINGHAM, Hobbs, and J. K. HUFENDICK, Wink.

A. J. SCOTT, managing director of the Anaconda Oil Company, of Calgary, Alberta, left recently on a business trip to Vancouver, British Columbia.

D. C. HARMON, assistant production superintendent for Stanolind Oil & Gas Company at Houston, Tex., was a business visitor at the company's offices at Lake Charles, La., the past week.

E. B. LYMAN, assistant public relations manager for Standard Oil Company of New Jersey, is now on a trip to South American countries, which will necessitate his absence from the New York office for about six weeks.

JACK OLLIMEN, T. J. DOWNEY, E. W. RICHARDSON and KARL B. JANMAN, California drillers, have signed contracts with the Attock Oil Company and are on their way to Punjab, India. Three other California drillers, JOHN S. RAMIREZ, J. S. DYKES and E. L. RIDGEWAY will leave soon for Java where they will work for the Netherlands-Pacific Petroleum Company, Ltd.

GEORGE BIGGS has been appointed assistant to the vice president of Continental Oil Company, according to an announcement by HARRY J. KENNEDY, vice president in charge of marketing. With offices in Ponca City, Okla., Mr. Biggs will develop plans and methods for use in Conoco's sales program, including the preparation of booklets and pamphlets on Conoco products. Born in Concordia, Kans., Mr. Biggs was graduated from the school of law at the University of Kansas in 1914. Before joining Socony-Vacuum Company in 1925, he was employed for two years as assistant personnel manager for the B. F. Goodrich Company. With Socony-Vacuum, he was division personnel manager at Kansas City for six years, then was transferred to that company's New York offices.

A. Y. LEWIS, J. PAUL PRICE and GLENN BRACKEN, all of Tyler, Tex., have formed the L. P. & B. Oil Corporation, and charter of incorporation has been filed in Caddo Parish, Louisiana.

WALTER B. COLLINS, with Humble Oil & Refining Company, has been transferred from the Houston, Tex., headquarters, where he was title man in the land department, to Midland, Tex., as district land man.

E. M. PARKIN, general superintendent of natural gasoline plant, Glacier Production Company, of Cut Bank, Mont., and M. A. HARDIE, manager of gas measurement department for the same company, with offices in Butte, Mont., are making a trip through the Mid-Continent field and Gulf Coast.

DR. RALPH D. REED, of the Texas Company in California and national president of the American Association of Petroleum Geologists; HARRY R. JOHNSON, president of the Pacific section of the association, and FRANK MORGAN, chief geologist of Rio Grande Oil Co. and general chairman of convention committees, have completed preparations, with the assistance of several committees to make the annual meeting a success.

C. A. BARRERE has been made plant manager of the Bradford Oil Refining Company, at Bradford, Pa. Mr. Barrere was graduated from the Louisiana State University as chemical engineer. After graduation, he was employed in the engineering department of the Gulf Refining Company of Port Arthur, Tex., for eight years was process engineer and assistant superintendent of the Texas Pacific Coal & Oil Company, Fort Worth, Tex., and was plant superintendent of the Okmulgee refinery of the Phillips Petroleum Company for two and a half years.

Friends Are His Hobby

Friends are Paul W. Pitzer's hobby. It probably explains why he got off to a flying start as an oil well supply salesman in the Ranger boom in Texas. That was his entrance into the oil business, but he wanted to get into it more directly, so saving his money, he bought a string of cable tools and became a drilling contractor. In May, 1920—the Ranger boom was on the decline now—he and C. K. West formed the firm of Pitzer & West, Breckenridge, Tex. It is the oldest oil partnership in West Texas. Starting in a modest way, the firm expanded its producing and contract drilling operations until now it has 2,000 acres of developed land and 1,200 undeveloped. Mr. Pitzer is vice president of the Chemical Process Company, Inc., which he and Mr. West formed several years ago and which conducts an important business in acidizing wells.

PAUL W. PITZER

Mr. Pitzer was born in Parker County, Texas. After attending the Sweetwater, Tex., high school he worked as a telegraph operator for a while. After that he got his preliminary experience in leasing at county fairs, picnics and celebrations of various kinds. Which is to say he leased lemonade and hamburger stands. Then he launched into oil, where he became an active figure. He recently finished a term as president of the West Central Oil and Gas Association. Mr. Pitzer does much of his traveling by airplane, and his company has purchased its third ship. He married Miss Ethel Virginia Moore, of Abilene, Tex., and they have two sons. When there is time he likes to fish and hunt.

W. V. HOWARD, consulting geologist, Tulsa, Okla., was in Fort Worth, Tex., on business last week.

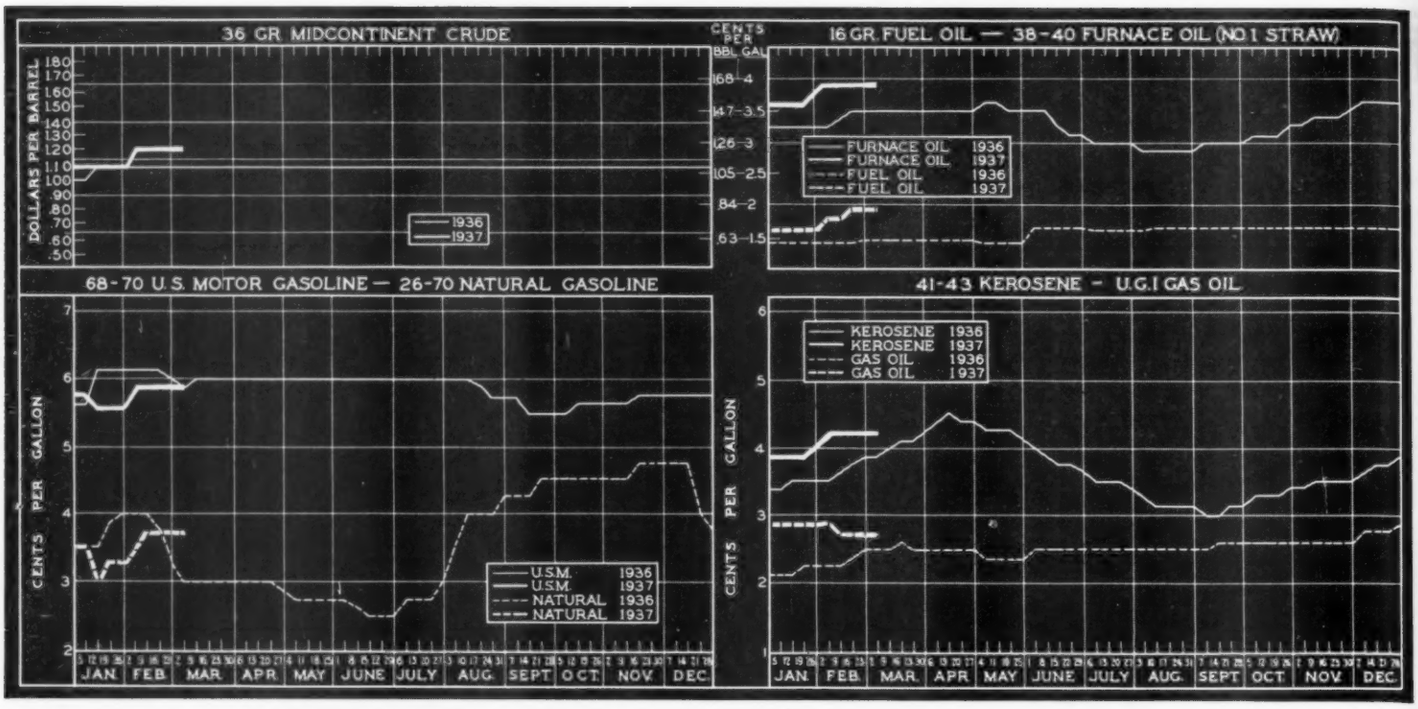
A. G. LEVY, chief engineer of the Texas Company, Shreveport, La., has been appointed chairman of the program committee for the Southwestern district A.P.I. meeting to be held in Dallas on April 1 and 2.

JOHN HOWELL, fire prevention engineer of the Union Oil Company, with offices in Los Angeles, Calif., was one of the principal speakers at the last monthly meeting of the California Natural Gasoline Association and discussed oil fire hazards.

E. G. THOMPSON, one of the co-discoverers of the Talco field, eastern Texas, will be principal speaker at the March meeting of the Shreveport Geological Society. He will speak on the fault line of North Texas, with special reference to the Talco and Sulphur Bluff fields.

HARLAN W. HOW has rejoined the staff of the Struthers Wells-Titusville Corporation as technical director. He was formerly chief engineer of the Buffalo Foundry & Machine Company and, lately, consulting engineer of the Blaw Knox Company at Pittsburgh, Pa. Mr. How is located at the Titusville Iron Works Company division at Titusville.

FRANK WHEATLEY, JR., son of FRANK WHEATLEY, president of Wheatley Brothers, pump and valve manufacturers, Tulsa, will make a trip in the near future to familiarize himself with the oil fields of Europe and the Near East. Mr. Wheatley, who is the third generation of the family to engage in the machine business, will enter Boston Tech this fall, following his trip, for advanced study in engineering. Upon completion of his course he expects to assume his duties as an executive in the Wheatley Brothers plant.



Representative Mid-Continent Quotations on Crude Oil and Refined Products. Basis Oklahoma (Group 3)

Gasoline Market in Group 3 Territory Awaits Good Weather to Revive It

By T. F. SMILEY

Gasoline in the Group 3 market was suffering this week from an attack of anemia. The trade was waiting for good weather, which it was hoped would have a quickening effect on a market in need of a tonic. Buying was of a grudging sort, and quotations were so erratic as to make it somewhat difficult to determine what the ruling prices really were. The motor fuels, depressed by seasonal and other factors, had begun to display a moderately steadier tone last week, and the more optimistic-minded refiners were indulging a feeling of mild cheerfulness, when a heavy snowstorm swept over the Middle West and other parts of the Group 3 marketing area, reducing motor travel to the bare necessities of transportation.

SOME SOLD AT CONCESSIONS

Odd cars of gasoline looking for an immediate outlet were reported to have been disposed of at concessions. Some of this, it was said, was material which had been made to winter specifications, and the owners desired to get it out of their tanks in order to use the storage space for summer-grade motor fuel. Though most of the stocks seeking a place to go were third-grade, a few cars of middle-bracket material were reported to have been bought at less than the ruling prices. In these scattered cases, it was said, the merchandise barely was able to squirm into the 68- to 70-octane category. None of these cut prices apparently were truly representative of the market, the great bulk of the past week's business having been done at virtually the same prices as those which ruled last week.

Retail gasoline dealers at various points in Oklahoma and Texas are organizing with a view of protecting themselves from loss of profit resulting from recent changes in wholesale and retail prices.

Somewhat to the astonishment of the trade itself, natural gasoline continued to hold its ground, the 26-70 grade commanding 3¾ cents in Oklahoma and 3½ cents in Texas. Current demand was said to be sufficient to prevent any serious soft spots from developing. The market in Texas was firm, which is a little more than could be said of the Oklahoma market. However, buying by large interests was taking up any slack in Oklahoma. This is the orthodox time of the year for the naturals to sag, and nobody was making predictions.

Kerosene and the tractor fuels were vigorous, a smart rural jobber demand having begun to develop. Although the spring plowing season has not yet opened, jobbers are buying in preparation for it. A feeling prevails that kerosene, which has been putting on an impressive performance, has probably touched the top for the time being. Whether or not it will climb to higher levels a few weeks later depends probably upon the size of the inventories accumulated by jobbers in the interim. Some important Texas refiners have been making kerosene for export. These overseas orders are understood to be about cleaned up, and the refiners are switching to tractor distillates, for which there is expected to be a heavy demand as soon as spring weather permits farm tractors to get to work.

FURNACE OIL STRONG

Furnace oils were still strong, in the face of recent forecasts that they were about to enter their seasonal decline. Jobbers are buying cautiously, in the hope of having just enough to meet dealer demand, and no more, so that they will not have a surplus to carry over into the next season. Prolongation of wintry weather is forcing enough buying, however, not only to enable prices to hold, but in some cases to push them up a little farther. This was noted in the No. 2 dark and straw distillates.

Bright stocks were in excellent position, with price up a half-cent. The markup of Pennsylvania bright stocks had a stimulating effect on Mid-Continent prices. This material is now in its season of heaviest demand. Steam-refined stocks also were up.

No letup in the clamor for heavy fuels was observable, nor was there any apparent slackening in their scarcity. Railroads and industries continued to scour all possible sources of supply. Industrial gas oil was active. Wax was in demand at unchanged prices.

Refined Oil Market Barometer

Seasonal influences are operating along with others to create a weak gasoline market. Consumption is at the low point of the year, stocks are piling up at a disconcerting rate, and prices are still out of alignment with crude costs. Refiners are hoping that the motor fuel market can be kept from floundering till motoring weather revivifies demand.

MID-CONTINENT. Gasoline dull. Kerosene, furnace oils and heavy fuels strong.

EAST COAST. Kerosene and heavy industrial fuels vigorous. Gasoline unsteady.

GULF COAST. Gasoline off. Kerosene and burning oils firm.

CALIFORNIA. Kerosene and kerosene distillate firm. Diesel steady. Fuel oil easy.

PENNSYLVANIA. Bright stocks, cylinder stocks, wax strong. Kerosene, fuel oil firm.

New York Gasoline Market Unsettled; But Other Products Are Unchanged

By H. STANLEY NORMAN

NEW YORK, Mar. 2.—Unsettled conditions still prevailed in New York harbor's gasoline market last week, but most of other petroleum products enjoyed reasonably brisk demand at unchanged quotations.

Current discord in the gasoline market in and near New York is traceable to two sources. Probably directly responsible is the persistence of two or three marketers selling barge lots of gasoline at 6¾ cents per gallon. Furthermore, retail markets in northern New Jersey and in metropolitan New York have not responded to stabilization efforts with the result that suppliers are subjected to constant pressure from their customers purchasing for tankcar or barge delivery. Hardly any suppliers are still asking 7.25 cents per gallon in tankcars, the price set by a half-cent advance when crude oil was raised late in January. A majority appear asking 7 cents per gallon for 65 octane material and above in the New York harbor district. The general price of 7 cents, however, is a quarter cent higher than the quotation prevailing before the crude advance.

Volume of gasoline business continues highly satisfactory in consideration of the season. Motoring weather prevails. Marketers are satisfied now that no protracted interference with movement of gasoline will be experienced this winter.

Demand is particularly active in the heavy industrial fuels.

Tankcar prices on Essolene light and No. 1 heating oils were reduced a quarter-cent Tuesday in New York, Baltimore, Norfolk and Charlestown. Other grades of light fuel and industrial oils were reduced an eighth-cent at Standard Oil Co. of New Jersey delivery points.

Dealers are continuing to buy on a hand-to-mouth basis, realizing that the burning season is limited. Until slightly colder weather stimulated the demand at the end of last week, a few dealers were reported offering light fuels at fractionally lower prices. The price concessions appeared confined, however, to an occasional part tank-wagon lot. The cutting seemed to be dictated by expediency, rather than by the market itself. Although most suppliers are in position to make prompt delivery of fuel oils, stocks appear to be low. While there is not the scramble for available material experienced earlier in the winter, one or two refiners are still buying in the open market to supplement their own supplies for delivery to contract customers. Foreign absorption of considerable gas oil offered on the Gulf Coast has aided materially in keeping the north Atlantic seaboard market on firm foundation.

The advance of 10 cents per barrel in the Pennsylvania producing district announced by all purchasers at mid-week probably accurately reflects the demand for lubricating stock. Despite successive advances since January 15, interest in both bright and dark stocks has been maintained remarkably well. Several suppliers are reported behind on their shipments, although the spot market is not particularly active. Inquiry for cylinder stock and bright stock is particularly active from foreign interests, but domestic jobbers are joining in the search for a source of supply. All spot offerings of lubricating stock were quickly accepted in the Pennsylvania district, excepting in the case of neutrals. Buyers of neutral oils were particularly inactive last week, although buying for the summer motor oil season is expected to start soon. Despite lack of recent interest in the neutral oil market, stocks in hands of Pennsylvania refiners are said to be lower now than they were January 1.

Considerable activity from domestic and export buyers continues focused on crude scale wax. Most sellers are quoting 2.65 cents per pound for 124-126 white scale, although an occasional sale in New York area at fractionally lower prices was reported during the week. There appears no particular anxiety on the part of suppliers to push material on the market even at present prices. Supplies of scale on the Gulf Coast are reported inadequate to satisfy the demand and north Atlantic refiners are apparently hopeful customers will seek the material elsewhere. Slightly higher prices were generally asked by western Pennsylvania refiners with a majority of sales of 124-126 white scale material last week at 2.7 cents per pound.

Present and future export business on gas oil is outstanding in Gulf Coast markets. Eight or more cargoes of gas oil have been sold during the past three or four weeks to export customers for loading in April, May and June. Most buyers were unsuccessful in their efforts to purchase 30 plus translucent and transparent oil for less than 4 cents per gallon. Firm offers of 3.875 cents were extended by purchasers supplying foreign customers. However, most refiners were unwilling to consider the business for less than 4 cents. One cargo was reported sold during the week at the higher price.

A cargo of light diesel oil was reported sold on the Gulf Coast last week for 3 15/16 cents per gallon. The cargo of gas oil sold at 4 cents was said to be scheduled for delivery in Italy.

Considerable of the European interest now current in American fuel oil markets is said to be due to failure of Russia to renew expiring contracts on this material. It was reported that inquiries remaining in the Gulf Coast market for gas oil are from French and German accounts.

Bunker C fuel oil is said to be scarce on the Gulf Coast, although the high charter rates still existing in the vessel market are hindering movement into remote markets.

Although no cargoes were reported sold during the week, gasoline prices seem well established and in no danger of weakening. Gasoline of 65 octane and above was generally quoted at 6.125 to 6.25 cents per gallon with a cargo of 64-66, 375 endpoint material offered for export lifting at 6 cents per gallon.

Arrest of the rate of addition to gasoline stocks during the past two weeks appears to have been due largely to generally favorable motoring weather and increasing consumption. Most refiners now doubt that gasoline stocks will reach the high peak of 78,000,000 bbls. on March 31. Their calculations are based partly on anticipated consumption in March and partly on the prospect that fuel oil demand will taper off permitting refiners to curtail crude throughput. Outside of western Pennsylvania, however, stocks of gasoline appear to be reasonably firmly held. The western Pennsylvania surplus consists of the U. S. Motor material of low octane rating. This material was offered last week at declining prices. The Bunker C fuel oil in New York harbor territory is reported moving at satisfactory rates at the regular price of $1.20 per bbl.

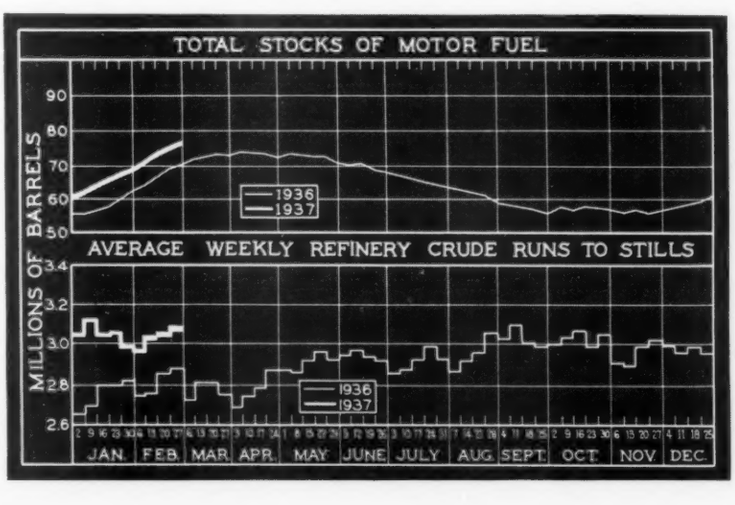
A determined effort to avert a federal tax of a cent per gallon on fuel oil is being made by refining companies and jobbers of the Northeast. Most fuel oil customers were circularized last week with form letters showing that the average fuel oil bill would be increased $25 to $30 per year if the tax is imposed. With the form letter was another letter addressed to representatives of the customer's district protesting the tax.

A. P. I. Weekly Refinery Statistics

Week Ending February 27, 1937

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline (bbls.)	Gas oil and fuel oil (bbls.)
East Coast	100.0	521,000	16,371,000	7,388,000
Appalachian	88.4	110,000	2,599,000	568,000
Indiana, Illinois, Kentucky	92.1	430,000	12,975,000	4,803,000
Oklahoma, Kansas, Missouri	84.6	310,000	9,291,000	2,819,000
Inland Texas	54.5	121,000	2,164,000	1,306,000
Texas Gulf	95.5	663,000	10,432,000	6,369,000
Louisiana Gulf	96.3	137,000	1,680,000	1,655,000
North Louisiana and Arkansas	63.7	40,000	455,000	274,000
Rocky Mountains	69.7	42,000	1,808,000	696,000
California	90.9	478,000	14,844,000	70,528,000
Total reported	88.8	2,852,000	72,619,000	96,406,000
Estimated unreported	.....	233,000	3,997,000	2,770,000
*Estimated total	.....	3,085,000	76,616,000	99,176,000
*Estimated total previous week	.....	3,065,000	74,798,000	99,391,000
*February 29, 1936	.....	2,870,000	71,584,000	95,856,000

*Bureau of Mines basis, currently estimated.



RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of March 2, 1937

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank-wag.
Chicago, Ill.	16.0	14.0	4.0	10.1
Decatur	16.0	14.5	4.0	10.1
Joliet	16.0	14.5	4.0	10.1
Peoria	16.0	14.5	4.0	10.1
Quincy	15.8	14.3	4.0	9.9
Davenport, Ia.	16.0	14.5	4.0	10.1
Des Moines	15.8	14.3	4.0	9.9
Mason City	16.2	14.7	4.0	10.3
Sioux City	16.0	14.5	4.0	10.1
Duluth, Minn.	16.8	15.3	4.0	10.9
Mankato	16.4	14.9	4.0	10.5
Twin Cities	16.4	14.9	4.0	10.5
La Crosse, Wis.	17.4	15.9	5.0	10.5
Green Bay	17.7	16.2	5.0	10.8
Milwaukee	17.3	15.8	5.0	10.4
Detroit, Mich.	15.1	13.6	4.0	9.8
Grand Rapids	16.5	15.0	4.0	10.9
Saginaw	16.3	14.8	4.0	10.7
Evansville, Ind.	17.5	16.0	5.0	†10.6
Indianapolis	17.7	16.2	5.0	†9.6
South Bend	17.9	16.4	5.0	†9.6
Fargo, N. Dak.	17.4	15.9	4.0	11.5
Minot	18.6	17.1	4.0	12.7
Huron, S. Dak.	17.8	16.3	5.0	10.9
Kans. City, Mo.*	15.4	13.9	4.0	8.9
St. Louis*	15.7	14.2	4.0	9.8
St. Joseph*	15.4	13.9	4.0	9.5
Wichita, Kans.	14.9	13.4	4.0	8.9

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax.

(Exclusive of state general sales taxes, except Indiana and South Dakota.)

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off, minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex A, 1-399 gallons, 5.75 cents, 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
Atl'tic City, N.J.	13.0	11.5	4.0	8.0
Newark	12.5	11.5	4.0	8.0
Annapolis, Md.	15.1	13.6	5.0	10.0
Baltimore	14.5	13.0	5.0	9.0
Cumberland	16.9	14.4	5.0	10.0
Wash'g'n, D.C.*	12.5	11.0	3.0	9.0
Danville, Va.	17.7	15.2	6.0	12.9
Norfolk	16.5	14.0	6.0	11.5
Petersburg	16.8	14.3	6.0	11.7
Richmond	16.8	14.3	6.0	11.7
Roanoke	18.0	15.5	6.0	12.9
Charles'n, W. Va.	16.3	13.8	5.0	12.6
Parkersburg	15.6	13.1	5.0	11.2
Wheeling	15.5	14.0	5.0	12.2
Charlotte, N. C.	18.9	16.4	7.0	12.6
Hickory	19.4	16.9	7.0	13.0
Mt. Airy	19.2	16.7	7.0	12.8
Raleigh	18.5	16.0	7.0	12.1
Salisbury	19.0	16.5	7.0	12.7
Charleston, S. C.	17.5	15.0	7.0	11.1
Columbia	18.5	16.0	7.0	12.1
Spartanburg	19.2	16.7	7.0	12.9

*Standard of N. J. has discontinued posting service-station prices at all above points except at Washington where a station price of 16 cents is in effect.

Price basis to commercial consumers, effective Nov. 2, 1936, in New Jersey, Maryland, District of Columbia and small portion of Virginia: On deliveries of 500 gallons or more by hose connection, consumer tankcar price plus .5 cent; less than 500 gallons, plus .75 cent, not taking deliveries by hose connection, plus 1 cent.

Effective Jan. 7, 1937, in greater portion of Virginia and in West Virginia differential above tankcar price on yearly purchases: up to 35,999 gallons, 2.5 cents over tankcar; 36,000 to 119,999 gallons, 2.0 cents; 120,000 to 239,999 gallons, 1.5 cents; 240,000 to 479,999 gallons, 1 cent; over 480,000 gallons .5 cent over tankcar price.

Effective Jan. 25, 1937, in North and South Carolina: Deliveries of 50 gallons or more by tank-wagon billed at price 2 cents over posted consumer tankcar price in effect at time and place of delivery. Deliveries less than 50 gallons billed at price .6 cent over posted tankcar price. Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline			Kero
	Tank wag.	Net dlr.	Inc. tax	tank-wag.
Atlanta, Ga.	22.0	19.0	7.0	*14.5
Augusta	21.0	18.0	7.0	*14.0
Macon	21.5	18.5	7.0	*14.5
Savannah	20.0	17.0	7.0	*13.0
Birm'ham, Ala.	22.0	19.0	8.0	13.0
Mobile	22.0	19.0	9.0	11.0
Montgomery	23.0	20.0	9.0	12.5
Jackson, Miss.	21.0	18.0	7.0	*13.0
Vicksburg	20.5	17.5	7.0	*13.0
Jacksonville, Fla.	20.5	17.5	8.0	11.0
Miami	20.5	17.5	8.0	12.5
Pensacola	23.0	20.0	9.0	12.0
Tampa	21.5	18.5	8.0	12.0
Lexington, Ky.	19.5	16.5	6.0	11.0
Covington	19.0	16.0	6.0	11.0
Louisville	19.5	16.5	6.0	10.5
Paducah	19.0	16.0	6.0	10.0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1 cent state tax. Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon. Pensacola, and Tampa, Fla., have a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Dealer	Serv. sta.	Inc. tax	tank-wag.
Denver, Colo.	17.5	....	5.0	11.5
Grand Junction	20.0	....	5.0	15.0
Pueblo	15.5	....	5.0	10.5
Casper, Wyo.	18.0	....	5.0	11.5
Cheyenne	18.0	....	5.0	13.0
Butte, Mont.	19.5	....	6.0	14.5
Billings	21.5	....	6.0	14.5
Helena	21.5	....	6.0	14.5
Great Falls	21.5	....	6.0	14.5
Salt Lake, Utah	19.5	....	5.0	16.0
Twin Falls, Ida.	21.5	....	6.0	18.0
Boise	21.0	....	6.0	18.0
Albu'que, N. M.	17.5	....	6.5	12.0

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero
	Tank wag.	Serv. sta.	Inc. tax	tank wag
Ohio points	18.0	(†)	5.0	*13.5

*Includes state tax of 1 cent.

†Following the leasing of service stations to dealers at many points the company no longer posts a statewide service station price.

Pacific Coast Territory

STANDARD OIL CO OF CALIFORNIA

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
San Francisco	17.0	18.0	4.0	11.5
Los Angeles	16.5	17.5	4.0	9.0
Fresno, Calif.	18.0	19.0	4.0	12.0
Phoenix, Ariz.	20.5	21.5	6.0	‡16.0
Reno, Nev.	19.5	20.5	5.0	13.0
Portland, Ore.	19.5	20.5	6.0	13.5
Seattle, Wash.	19.5	20.5	6.0	13.5
Tacoma	19.5	20.5	6.0	13.5
Spokane	22.5	23.5	6.0	16.5

‡Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
Albany, N. Y.	13.5	12.0	4.0	7.75
*Met. N. Y.:				
Manh't'n, Br'nx	13.5	12.0	4.0	7.25
State Island	13.75	12.0	4.0	7.25
Q'ns & Brklyn	13.5	12.0	4.0	7.25
Buffalo	14.3	12.67	4.0	8.25
Rochester	14.3	12.74	4.0	8.25
Syracuse	14.3	12.7	4.0	8.75
Boston, Mass.	13.5	12.0	4.0	7.50
Portland, Me.	15.3	13.0	5.0	7.75
Manch'ter, N. H.	15.8	13.5	5.0	8.00
Burlington, Vt.	15.4	13.4	5.0	8.75

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point: Monthly purchases under 5,000 gallons, pay divided dealer tank-wagon price at delivery point.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
Philadelphia, Pa.	14.0	12.5	5.0	10.5
Pittsburgh	15.5	13.5	5.0	11.0
Allentown	14.5	13.25	5.0	11.0
Erie	14.5	13.0	5.0	11.0
Scranton	14.5	13.25	5.0	11.0
Altoona	15.5	13.5	5.0	11.0
Dover, Del.	14.5	....	5.0	11.0
Wilmington	13.5	....	5.0	11.0
Springf'd, Mass.	13.8	....	4.0	7.5
Worcester	14.3	....	4.0	8.0
Hartford, Conn.	13.6	....	4.0	7.5
NewHaven	13.5	....	4.0	8.0
Providence, R.I.	12.5	....	3.0	7.5

Atlantic has transferred all stations to dealers except in Philadelphia and Pittsburgh where prices are 17.5 and 20.0 cents per gallon respectively.

Price basis to undivided dealers—Dealer tank-wagon less .5 cent per gallon.

Consuming accounts not under contract—when made by tank-wagon in quantities of 50 gallons or over, dealer price.

Commercial accounts under contract—annual consumption 2,500 to 100,000 gallons per year, 1 cent above posted tankcar price; over 100,000 gallons per year, .5 cent above posted tankcar price.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wag.	Dlr. tax	Inc. tax	tank-wag.
Omaha	18.4	16.9	6.0	10.4
McCook	19.1	15.3	6.0	11.1
Norfolk	18.8	17.3	6.0	10.8
North Platte	19.2	17.7	6.0	11.2
Scotts Bluff	19.9	18.4	6.0	10.9

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
N. Orleans, La.	20.0	17.5	*10.0	†11.0
Baton Rouge	18.0	15.5	8.0	12.0
Alexandria	18.5	16.0	8.0	12.0
Lafayette	19.0	16.5	8.0	12.5
Lake Charles	19.0	16.5	8.0	12.5
Shreveport	17.5	15.0	8.0	11.0
Knoxville, Tenn.	21.0	18.5	8.0	14.0
Memphis	19.0	16.5	8.0	12.0
Chattanooga	20.5	18.0	8.0	13.5
Nashville	20.0	17.5	8.0	13.0
Bristol	19.75	18.5	8.0	14.5

*Includes 2-cent parish tax. †Includes 1 cent parish tax and 1 cent state tax.

Standard of La. has transferred all stations to dealers except in New Orleans and Baton Rouge where station prices are 23.5 and 21.5 cents per gallon, respectively.

Price basis to commercial consumers: effective Dec. 21, 1936, deliveries of 50 gallons or more in one delivery, posted consumer tankcar price plus 2 cents per gallon; consumers taking deliveries of less than 50 gallons at one time pay posted consumer tankcar price plus 6 cents per gallon.

Louisiana kerosene prices include 1-cent state tax.

Naphtha

STANDARD OIL CO (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150 gallon lots if covered by contract.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline			Kero
	Dealer	Serv. sta.	Inc. tax	tank wag
Muskogee, Ok.	15.5	....	5.0	7.0
Okla. City	13.0	....	5.0	8.0
Tulsa	14.0	....	5.0	7.0
Ft. Smith, Ark.	15.0	....	5.0	10.0
Little Rock	17.5	....	7.5	9.5
Texarkana	15.0	....	5.0	9.0

Texas

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
Dallas, Tex.	14.0	18.0	5.0	8.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	14.5	18.5	5.0	8.0
San Antonio	14.5	18.5	5.0	8.0

Tank-wagon price is to contract dealers and commercial consumers, the price to open dealers being .5 cent above tank wagon price.

Canada*

3 Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline			Kero
	Tank wag.	Serv. sta.	Inc. tax	tank wag.
Hamilton, Ont.	22.0	....	6.0	17.0
Toronto, Ont.	22.0	24.5	6.0	17.0
Brandon, Man.	29.8	32.8	7.0	23.3
Winnipeg, Man.	28.2	31.2	7.0	20.7
Regina, Sask.	29.5	....	7.0	22.8
Saskatoon, Sask.	32.3	....	7.0	24.8
Edmonton, Alta.	30.5	33.5	7.0	24.3
Calgary, Alta.	28.0	31.0	7.0	21.8
Vancouver, B. C.	22.0	26.0	7.0	23.0
Montreal, Que.	19.0	....	6.0	17.5
St. John, N. B.	24.0	28.0	8.0	18.5
Halifax, N. S.	24.0	28.0	8.0	18.5

*Imperial gallon used in Canada.

Discount to dealers: Divided dealers pay 3 cents per gallon below station price; undivided dealers pay 4 cents per gallon below station price except in cities of Hamilton, Toronto and Montreal when discounts below station prices are one-half cent per gallon less and in Vancouver where discounts are 1 cent per gallon more.

Retail Price Changes

Standard Oil Co. of Kentucky February 15 advanced tank-wagon and dealer gasoline .5 cent in Lexington, Covington and Louisville; February 8 advanced tank-wagon and station gasoline .5 cent in Atlanta, Augusta, Macon, Savannah, Jacksonville, Miami, Pensacola and Tampa; January 9 advanced tank-wagon kerosene .5 cent in Louisiana and Montgomery; January 12 reduced tank-wagon kerosene .5 cent in Pensacola; January 23 reduced tank-wagon kerosene 1 cent in Mobile; January 20 reduced tank-wagon kerosene 1 cent in Jacksonville; and February 9 advanced tank-wagon and dealer gasoline 2 cents in Mobile.

Continental Oil Co. February 23 reduced dealer gasoline 1 cent in Oklahoma City and reduced tank-wagon kerosene 1 cent in Tulsa; February 22 advanced dealer gasoline .5 cent in the Rocky Mountain area; February 24 reduced dealer gasoline 1.5 cents in Tulsa, and February 26 advanced tank-wagon kerosene .5 cent in Pueblo and Denver.

Standard Oil Co. of Nebraska February 23 advanced tank-wagon kerosene .3 cent throughout Nebraska.

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of March 2, 1937

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below (3d gr.)	.04¾	.05
63-67 octane	.05⅛	.05½
68-70 octane (regular)	.05⅞	.06
60-62 400 grades:		
62 octane and below (3d gr.)	.04¾	.05
63-67 octane	.05⅛	.05½
68-70 octane (regular)	.05⅞	.06
64-66 375	.05	.05⅛
68-70 360	.05⅛	.05⅜

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04⅝	.04⅞
63-67 octane	.05	.05⅛
68-70 octane (regular)	.05⅜	.05⅞
60-62 400	.04¾	.05
64-66 375	.05	.05⅛

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:		
62 octane and below	.05⅛	.05⅜
63-67 octane	.05⅜	.06
68-70 octane (regular)	.06⅛	.06⅜

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below	.05⅜	.05⅞
63-67 octane	.05⅜	.06
68-70 octane (regular)	.06⅛	.06⅜

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04¾	.04⅞
63-67 octane	.05⅛	.05¼
68-70 octane (regular)	.05⅝	.05⅞
60-62 400 grades:		
62 octane and below	.04¾	.04⅞
63-67 octane	.05⅛	.05¼
68-70 octane (regular)	.05⅝	.05⅞
64-66 375	.05	.05¼
68-70 360	.05¼	.05½

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane		.05
60-64.9 octane	.06¾	.07
65-70 octane	.07	.07¼
64-66 375		.05½
68-70 350		.05¾

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.07	.08
58-60 400, 65 octane and higher	.07¾	.08¾

EAST COAST (domestic)—

U. S. Motor below 60 octane:		
*New York (Bayonne)		.06¾
Baltimore		.06¾
U. S. Motor, 60-64.9 octane:		
*New York (Bayonne)		.07
Philadelphia	.07	.07¼
Boston		.07¼
Baltimore	.07	.07¼
Charleston, S. C.		.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)		.07¼
Philadelphia	.07¼	.07½
Boston		.07½
Baltimore	.07¼	.07½
Charleston, S. C.		.07½

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05½	.05⅝
60-64.9	.05¾	.06
65 octane and higher	.06⅛	.06⅜

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)	.04⅞	.05
52-54 450 (blending)	.04⅞	.05
54-56 450 (blending)	.05	.05⅛

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.03¾
Grade 18-55		.04½
Low vapor pressure grade:		
*14-pound v.p. (max.)	.05	.05¼
*12-pound v.p. (max.)	.05½	.05¾

*Nominal.

NORTH TEXAS—

Grade 26-70		.03½
Grade 18-55	.04	.04¼

CALIFORNIA—

75-85 375-390	.06¾	.07½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70		.04½

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.	.04⅛	.04¼
41-43 gr., 300-350 i.b.p., 110-125 flash, 500-520 e.p.	.04¼	.04⅜
46-48 gr., 210-230 i.b.p., 480 max. e.p.	.04⅝	.04⅞

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04¼	.04⅜
42-44	.04⅜	.04½

NORTH TEXAS—

41-43	.04¼	.04⅜

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04⅜	.04½

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04½	.04⅝

PENNSYLVANIA (inland refineries)—

45	.05⅛
46	.05¼
47	.05⅜

CHICAGO (Based on Group 3)—

41-43	.04¼	.04¼
42-44	.04¼	.04⅜

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04	.05

NEW YORK (Bayonne, N. J.)—

41-43	.05¾

*GULF COAST (domestic)—

41-43	.05⅝

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42	.04	.04¼
No. 1 straw, 38-40	.03⅞	.04
No. 2 straw, 32-36	.03⅝	.03⅞
No. 2 dark, 32-36	.03⅝	.03¾
No. 3, zero to 15, 28-32	.03½	.03⅝
No. 3, 15 and above, 28-32	.03	.03⅛

NORTH TEXAS—

No. 1 prime white, 38-42		.04
No. 1 straw, 38-40		.03⅞

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03½	.03⅝

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03½	.03¾

CHICAGO (Based on Group 3)—

No. 1 prime white, 38-40	.04	.04⅛
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03⅝	.03⅞
No. 2 dark, 32-36	.03½	.03⅝
No. 3, zero to 15, 28-32	.03½	.03⅜
No. 3, 15 and above, 28-32	.02⅝	.02¾

NEW YORK (Bayonne, N. J.)—

*No. 1		.05¾
*No. 2		.05
*No. 4		.04¾

*Barge deliveries one-eighth to one-fourth cent under above, tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02¾	.03
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.87½	.92½
Below 18 fuel oil, industrial	.80	.87½

NORTH TEXAS—

U.G.I. gas oil	.02¾	.03
No. 4, low cold test, 24-28	1.10	1.15
No. 5, low cold test, 18-22	.87½	.92½
Below 18 fuel oil, industrial	.80	.85

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.77½	.85

ARKANSAS (Ark., N. La., Miss. del.)—

10-14 fuel oil, industrial	.70	.72½

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.87½	.92½
No. 6, low cold test, 10-16	.80	.85

PENNSYLVANIA (inland refineries)—

36-40	.04⅝	.04½

CALIFORNIA—

Los Angeles:		
30-34 gas oil, per bbl.	1.05	1.25
24 plus diesel	1.05	1.25
24 plus diesel (bunkers)	1.15	1.35
12-16 (bunkers at tidewater)	.90	1.00
10-16 (cargo lots)	.70	.95
12-17 (tankers)	.75	.95
San Joaquin Valley:		
10-18 (tankcars)	.70	.90
24 plus diesel, per bbl.	1.00	1.35
San Francisco:		
27 plus diesel		1.40
24 plus diesel (bunkers)		1.40
10-16 (bunkers)		1.00

GULF COAST—

28-30 gas oil	.03½	.03⅝
28-30 diesel (bunkers)		1.65
Bunkers (bulk cargoes)		.95
Bunker C (bunkers)		1.00

NEW YORK (Bayonne, N. J.)—

27 plus gas oil		.04¾
28-30 diesel (lighterage 6⅛c per bbl.)		1.85
28-30 diesel (tankcars)		.04¾
*Bunker C (to ocean-going ships in N. Y. harbor)		1.15
Industrial fuel (tankcars)		.04½

*Lighterage charge 5c bbl. additional.

Bright and Steam-Refined

OKLAHOMA (Group 3)—

Bright Stocks:	
190-200 D, 15-25	.22½
150-160 D, 0-10	.19½
150-160 D, 15-25	.19
150-160 E, 15-25	.18½
100-110 D, 0-10	.17½
Steam refined:	
631 green (treated)	.16
600 dark green (untreated)	.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 145-50 at 210, 540-550 flash):	
10 pour test	.26½
15 pour test	.25½
20 pour test	.24½
25 pour test	.23½
Steam refined:	
600	.16
650	.17
600 Pennsylvania flash	.18
630 flash	.19½
600 Warren E filtered	.18

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:	
150-3	.09
180-3	.10
180-4	.09½
200-3	.10½
200-4	.10
250-3	.11½
250-4	.11
280-3	.12½
280-4	.12
300-3½	.13
400-3½	.14
100-2½ paraffin oil	.05¾
15-20 Cold Test:	
200-3	.10
200-4	.09½
250-3	.11
250-4	.10½
280-3	.12
280-4	.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07⅝
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6		.07
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)

Pale Oils:		
100-2½-3	.07	.08
200-2½-3	.07	.08
300-2½-3	.07	.08
400-3-4	.09	.11
450-3-4	.09	.11
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07	.08
300-5-6	.07	.08
350-5-6	.10⅛	.11⅛
400-5-6	.10½	.11⅛
450-5-6	.10½	.11⅛
500-5-6	.10½	.11⅛
600-5-6½	.10½	.11⅛
700-6½ plus	.10½	.11⅛
750-6½ plus	.10½	.11⅛
900-6½ plus	.10½	.11⅛

PENNSYLVANIA—

150 vis. at 750° F. color, 400-405 flash:		
Zero pour test	.22	.22½
10 pour test	.21	.21½
15 pour test	.20½	.21
25 pour test	.19½	.20
180 vis. at 70° F., 3 color:		
25 pour test	.22	.22½
200 vis. at 70° F., 3 color:		
Zero pour test	.25½	.26
10 pour test	.24½	.25
15 pour test	.24	.24½
25 pour test	.23	.23½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02⅝	.02¾

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0265	.0270
124-126 (a.m.p.) w.c. scale	.0270	.0275

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0445
125-127 (a.m.p.) wax		.0455
128-130 (a.m.p.) wax		.0480
130-132 (a.m.p.) wax		.0505
133-135 (a.m.p.) wax		.0535
135-137 (a.m.p.) wax		.0560
124-126 (a.m.p.) w.s.	.0250	.0255
124-126 (a.m.p.) y.s.	.0260	.0265
Petrolatum in barrels, carload lots:		
Dark green		.01¾
Amber	.02¾	.03
Extra amber	.03	.03⅛
Lily white	.06⅝	.06¾
Snow white	.07¾	.07⅞
Cream	.05⅝	.05¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.05⅛
60-62 400		.05⅝
61-63 390	.05¾	.05⅞
64-66 375	.05⅞	.06

LOS ANGELES—

U. S. Motor grades:		
53-55 octane		.04¾
55-65 octane	.04¾	.05
65-67 octane		.05
67-69 octane		.05¼
Above 69 octane	.05½	.06

KEROSENE

GULF COAST—

41-43 prime white	.05	.05⅛
41-43 water white	.05⅛	.05⅜
44 water white	.05⅜	.05¾

LOS ANGELES—

41-43 water white	.04½	.05

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder Stocks:	
600 Warren E	.24⅛
600 S.R. unfiltered	.22
650 S.R. unfiltered	.23⅛
600 flash, S.R.	.24⅛
630 flash S.R.	.25½
Bright Stocks:	
8 color	.29½ .30
6½ plus color in dilution	.29 .29½

NEUTRAL OIL

200-3 color	.29½
150-3 color	.26½

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.04125
125-127 a.m.p.		.0425
128-130 a.m.p.		.0450
133-135 a.m.p.		.0525
135-137 a.m.p.		.0550
Crude scale:		
124-126 w.s.	.0260	.0270
124-126 y.s.	.0245	.0250

DEPARTMENT OF GEOGRAPHY THE UNIVERSITY OF NEBRASKA

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 28, 1937)

East Texas*	$1.27
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

West Texas

See gravity table.

Pecos County*	.91
Pecos shallow†	.81

*Shell Petroleum Co., Gulf Pipe Line Co., and Humble Oil & Refining Co. †Shell Petroleum Corp.

Gulf Coast

(January 28, 1937)

Choctaw and Darrow, La.	See note below
Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Tomball, Tex.	1.30
Lafitte, La.	1.24
Livingston, Tex.	1.27
Satsuma	1.20
Heyser, light (Nov. 1, 1936)	1.15
Heyser, heavy (Nov. 1, 1936)	.90
Placedo (Nov. 1, 1936)	.90
Welsh, La.	.98
Tepetate (La.) (Jan. 4, 1937)	1.12

Greta, Refugio, O'Connor, McFadden, Saxet, Segno, Taft, Tom O'Connor and Plymouth take same gravity prices as Gulf Coast. Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.13
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light*†	1.30
Grass Creek, Wyo., heavy (Nov. 4, 1936)*†	.62
Hamilton Dome, Wyo. (Nov. 4, 1936)*	.57
Elk Basin, Wyo., light*†	1.30
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light	.82
Hogback, N. Mex.*	1.33
Pondera, Mont. (Jan. 26, 1936)*	1.05
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†	1.23
Rock Creek, Wyo.†	1.20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. Mex.	.90
Maljamar, N. Mex.	.90
Canon City and Florence, Colo.	1.10
Florence, Colo.	.95
Lance Creek, Wyo.	.97
Sunburst, Mont. (June 5, 1936)	1.20
Cat Creek, Mont.	1.40
Cut Bank, Mont.	1.35

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	1.35
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich.	1.42
West Branch, Mich.	1.26
Arenac, Mich.	1.26
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River	1.42
Kentucky River	1.50
Western Kentucky	1.40

Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp., effective Jan. 29. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky.

Southwest Texas

(January 28, 1937)

Pettus	1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Luling	1.00
Lytton Springs	1.12

Saxet and Taft take same gravity table as Gulf Coast.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1.02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90

Eastern States

TIDE WATER PIPE LINE CO.
(Effective Feb. 24, 1937)

Bradford, Pa.	$2.67
Allegany, N. Y.	2.67

SOUTH PENN OIL CO.
(Effective Feb. 24, 1937)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.67
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.42
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.37
Pennsylvania Grade Oil in Buckeye Pipe Line lines	2.22
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Sept. 18, 1936)	1.32

PENNZOIL CO.
(Effective Feb. 24, 1937)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	2.67
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	2.66
Includes Tidioute district.	
Group C	2.65
Includes Turkey and Tidioute districts.	
Group D	2.64
Includes Bear Creek and Porkey districts.	
Group E	2.61
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

Price depends on lengths of pipe line haul to plant at Oil City.

PURE OIL CO.
(Effective Feb. 24, 1937)

Cabin Creek, W. Va.	2.37
Bradford Hollow, W. Va.	2.37
Kelly Creek, W. Va.	2.37

Canada

Ontario (Sept. 9, 1933)*	
Petrolia	$2.16
Oil Springs	2.17
Turner Valley, Alberta province (Dec. 16, 1936):†	
Clear naphtha	$2.60
Discolored naphtha, 65 gravity and higher	2.36
Discolored naphtha and crude oil, 40-40.9 gravity	1.85
Increasing 3 cents for each degree of gravity with top price for 64-64.9 gravity	2.37

These prices delivered field tankage.
*Imperial Oil, Ltd.
†Imperial Oil, Ltd., and Regal Oil & Refining Co. On crude oil alone British American Oil Co. posted above prices on December 9, 1936.

Mexico

Panuco*	$1.07

*In U. S. Currency, f.o.b. ship, based on January spot market transactions.

Crude Price Changes

The South Penn Oil Co., Tide Water Pipe Co. and other purchasers of Pennsylvania Grade crude oil advanced the prices in all districts 10 cents per barrel, effective February 24. This makes the range of prices from $2.22 to $2.67 per barrel.

Rocky Mountain Runs

Estimated daily average production in the week ending February 27 was as follows:

WYOMING

	Bbls.
Salt Creek	15,940
Big Muddy	1,380
Badger Basin	40
Black Mountain	70
Byron	2,490
Dallas Derby	540
Dutton Creek	50
Elk Basin	560
Frannie	2,260
Garland	2,230
Grass Creek	2,020
Hamilton dome	420
Hidden dome	500
Hudson	300
LaBarge	970
Lance Creek	11,490
Lost Soldier	1,130
Medicine Bow	2,000
Midway	30
Oregon Basin	2,300
Osage	670
Pilot Butte	20
Quealy dome	600
Rock River	1,240
South Casper	350
Poison Spider	230
Simpson Ridge	10
Teapot	20
Wertz	30
Waugh dome	60
Total Wyoming	49,950

MONTANA

Buckley-Border	170
Cat Creek	570
Cut Bank	9,750
Kevin-Sunburst	3,900
Lake Basin	40
Pondera	1,130
Total Montana	15,560

COLORADO

Florence	200
Fort Collins and Wellington	220
Iles dome	3,360
Moffat	410
Orchard	40
Rangely	80
Tow Creek	140
Total Colorado	4,460

NEW MEXICO

Artesia-Maljamar	2,950
Cooper	7,160
Eaves	860
South Eunice	890
Eunice	30,000
Hardy	950
Hobbs	21,570
Hogback	200
Jal	4,750
Monument	25,140
Penrose	1,490
Skelly	920
Rattlesnake	780
Table Mesa	90
Miscellaneous	130
Total New Mexico	97,880
Total Rocky Mountain region	167,850

Crude Prices by Gravities

	1 Oklahoma-Kansas	2 Oklahoma-Kansas	3 North and Central Texas	4 East Central Texas (Mexia district)	5 North Louisiana-Arkansas	6 Gray County, Texas	7 Hutchinson-Carson counties, Texas	8 Rodessa, Louisiana-Texas and Panola County, Texas	9 Conroe, Tomball, Raccoon Bend, Satsuma, Texas	10 Gulf Coast	11 Gulf Coast	12 West Texas except Pecos County, Lea County, N. Mex.	13 Mirando district, Texas	14 Marion County, Texas	15 Government Wells, Texas	16 Anahuac, Texas	17 White Castle, Louisiana	18 Iowa, Louisiana	19 Cayuga, Texas
Below 18	....	....	....	....	....	....	....	....	....	$.90	....	....	....	....	....	....	....	....	....
18-18.9	....	....	....	....	....	....	....	....	....	.92	....	....	....	....	....	....	....	....	....
19-19.9	....	....	....	....	....	....	....	....	....	.94	....	....	....	....	....	$.92	$.94	$.84	....
20-20.9	....	....	....	....	....	....	....	....	....	.96	$.95	....	$.90	....	$.90	.94	.96	.86	....
21-21.9	....	....	....	....	....	....	....	....	....	.98	.98	....	.93	....	.93	.96	.98	.88	....
22-22.9	....	....	....	....	....	....	....	....	....	1.01	1.01	....	.96	....	.96	.98	1.01	.91	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	.99	....	.99	1.00	1.04	.94	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.02	....	1.02	1.02	1.07	.97	....
Below 25	....	$.98	....	....	$.90	....	....	$.93	....	....	....	....	....	$.90	....	....	....	....	$.88
25-25.9	....	1.00	....	....	.92	....	....	.95	....	1.10	1.10	$.78	1.05	.92	....	1.04	1.10	.99	.90
26-26.9	....	1.02	....	....	.94	....	....	.97	....	1.13	1.13	.80	1.08	.94	....	1.06	1.13	1.03	.92
27-27.9	....	1.04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	....	1.08	1.15	1.05	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	....	1.10	1.17	1.07	.96
Below 29	$1.06	....	$.96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	....	1.12	1.19	1.09	.98
30-30.9	1.10	1.10	1.00	1.07	1.02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	....	1.14	1.21	1.11	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1.04	....	1.16	1.23	1.13	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06	....	....	1.09	1.28	1.25	1.25	.92	1.20	1.06	....	1.18	1.25	1.15	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	....	1.20	1.27	1.17	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	....	1.22	1.29	1.19	1.08
Below 35	....	....	....	....	....	$.96	$.91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	1.31	.98	1.26	1.12	....	1.24	....	1.10	....
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	1.33	1.00	1.28	1.14	....	1.26	....	....	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	1.35	1.02	1.30	1.16	....	1.28	....	....	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	1.37	1.04	1.32	1.18	....	1.30	....	....	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	1.39	1.06	1.34	1.20	....	1.32	....	....	....
40 and over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	1.41	1.08	1.36	1.22	....	1.34	....	....	....

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Dickey, Eason, El Dorado, Empire, Falcon, Globe, Gulf, Johnson, Kanotex, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.
Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.
Column 3—All purchasers.
Column 4—Humble Oil & Refining Co. and Sinclair Crude Oil Purchasing Co.
Columns 5, 6, 7 and 8—All purchasers.
Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tide Water Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)
Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.
Column 12—All purchasers.
Column 13—Humble Oil & Refining Co.
Column 14—Magnolia Petroleum Co.
Column 15—Sun Oil Co.
Column 16—Gulf Refining Co.
Column 17 and 18—Shell Petroleum Corp.
Column 19—Tide Water Oil Co.

MARKET RECORD, ACTIVE OIL STOCKS

Compiled by Carl M. Pforzheimer & Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1937 High	1937 Low	Week ended Feb. 27 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1936 High	1936 Low	1935 High	1935 Low
114	101	1,400	109½	107½	109	Amerada Corp.	788,675	N.P.	50cQ	1-30-37	$2.00	125½	75	80	48½
35⅞	30⅛	12,100	34¼	32¾	34	Atlantic Refining	2,664,904	$25	25cQ	3-15-37	1.25	35⅛	26⅝	28	20½
42½	35⅞	33,400	42½	39¾	40⅛	Barber Co.	387,149	$10	50c	12-10-36	.50	38½	21	22½	11¾
35¼	26⅛	22,400	32	29½	30⅞	Barnsdall Oil Co.	2,131,090	$5	25cQ	2-1-37	.80	28¼	14⅛	14¾	5⅞
20⅞	17	38,300	17¾	17	17¼	Columbia Gas & Elec.	11,610,036	N.P.	20c	11-16-36	.40	23⅜	14	15¾	3⅜
17¼	15⅝	51,800	16⅜	15⅝	15⅞	Consolidated Oil Corp.	13,983,287	N.P.	20cQ	2-15-37	.80	17¼	11½	12¼	6½
45⅜	41½	9,500	43½	41½	41¾	Continental Oil of Delaware	4,682,671	$5	25cQ	3-29-37	1.50	44⅞	28⅛	35	15⅛
17⅝	12½	24,200	15½	14⅝	14¾	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	13⅞	6⅜	7	1½
32¾	29¼	7,200	31¾	30⅝	31	Mid-Continent Petroleum	1,843,872	$10	75cSA	12-1-36	1.15	30⅞	17¼	20½	9½
29¾	26⅞	2,500	28	27	27⅝	Mission Corporation	1,399,345	N.P.	....	.....	.45	29⅞	16¾	17¾	10⅜
71½	62	1,400	67	65	65½	National Supply of Delaware	382,591	$25	....	5-15-31	....	75½	19⅞	20⅞	9
19½	17⅛	28,200	19⅛	17½	18⅛	Ohio Oil Co.	6,563,377	N.P.	35cSA	12-15-36	.60	18	12⅛	14¼	9¼
28	22¼	4,000	26¾	26	26⅛	Pacific Western Oil	1,000,000	N.P.	65c	12-18-36	.65	23½	11¾	14	6¾
4½	2¾	2,600	3⅛	3	3	Panhandle P. & R.	198,770	N.P.	....	.....	....	4¼	1⅜	1⅞	½
51½	49½	17,300	53⅞	52½	53⅞	Phillips Petroleum	4,152,836	N.P.	50cQ	3-1-37	2.50	52⅜	38⅛	40	13⅜
27⅛	24⅝	7,400	25¾	24⅝	25	Plymouth Oil Co.	1,050,000	$5	35cQ¶	3-31-37	.90	27¾	11⅞	13	6½
24⅜	19½	45,900	20⅝	19½	19⅝	Pure Oil Co.	3,038,370	N.P.	....	9-1-30	....	24⅞	16	17	5⅞
47¼	40¼	12,500	44⅜	40¼	43½	Seaboard Oil of Delaware	1,244,283	N.P.	25cQ	12-15-36	1.00	44	30½	36⅞	20¾
34¾	26⅞	19,200	34⅛	31½	33½	Shell Union Oil	13,070,625	N.P.	25c	12-15-36	.25	28¼	14¾	16½	5½
105⅝	102¼	1,200	104½	102¾	103⅝	Shell Union Oil 5½% pfd.	400,000	$100	26⅛c	12-15-36	28.87½	127½	102	111	63⅛
4⅛	3½	600	3⅞	3⅞	3⅞	Simms Petroleum	461,698	$10	50c liq.	1-9-37	2.25 liq.	6¾	3½	18¾	4¾
47	42	2,400	44	43⅛	43½	Skelly Oil	1,008,514	$15	....	12-15-30	....	47⅜	19½	20½	6½
19½	16¼	84,500	19	17⅞	18⅛	Socony-Vacuum	31,151,075	$15	25cSA	3-15-37	.70	17½	12½	15¾	10⅝
50	43¼	16,600	49¾	47½	47⅝	Standard Oil of California	13,014,754	N.P.	30cQ¶	3-15-37	1.20	47⅝	35	41⅛	27¾
50	46½	9,200	49⅛	47¼	47¾	Standard Oil (Indiana)	15,215,677	$25	40cQ¶	3-15-37	2.40	48½	32¾	33⅜	23
32	31	No sales ..	..	..	..	Standard Oil of Kansas	200,000	$10	$1	12-26-36	1.00	31	25	32	20
75¾	67¾	40,500	75	71⅝	72⅛	Standard Oil of New Jersey	25,856,081	$25	$1.25SA¶	12-15-36	2.00	70⅜	51⅛	52⅜	35¾
77½	72⅞	600	74	72⅞	72⅞	Sun Oil	1,733,013	N.P.	25cQ	3-15-37	$1 & 6% Stk.	91	70	77	60½
59⅜	50⅜	50,800	54⅛	51⅛	52	Texas Corp.	9,340,069	$25	50cQ	4-1-37	1.50	55¼	28⅞	30¼	16½
9¼	7⅞	12,900	8½	7⅞	8½	Texas Gulf Producing Co.	888,110	N.P.	5c	12-15-36	.05	8⅞	4⅜	4¾	2½
16⅝	13¼	16,000	15¼	14⅛	15	Texas Pacific Coal & Oil	880,703	$10	10c	3-1-37	.25	15¼	7½	9¼	3¼
21⅝	20⅛	11,900	21¼	20¼	20½	Tide Water Associated	5,642,342	N.P.	15cQ	3-1-37	.70	21¾	14¾	15⅞	7⅝
108	105⅛	3,200	106⅝	106¼	106⅝	Tide Water Associated pfd.	626,221	$100	$1.50Q	1-2-37	6.00	106½	100⅝	104½	84
28¼	24⅞	17,500	26⅛	24⅞	25⅜	Union Oil of California	4,386,070	$25	25cQ	11-10-36	1.00	28½	20¾	24	14¾
31½	26⅝	900	30¼	29⅝	30	Union Tank Car Co.	1,200,000	N.P.	40cQ	3-1-37	1.20	31⅝	22⅝	26½	20⅞
6¼	4½	3,400	5¾	5⅜	5⅝	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	5¼	2¾	3⅛	1

*Ex-dividend. †Plus extras ‡Also 50 per cent in stock of Barnsdall Ref. §Partly on account of accumulation. ¶Dividend 4/75 Mission Corp. paid 3-15-35. ¶Includes extras. **Plus 6% stock.

New York Curb Exchange

1937 High	1937 Low	Week ended Feb. 27 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1936 High	1936 Low	1935 High	1935 Low
21⅜	17⅛	2,200	18⅞	18	18⅛	Bridgeport Machine Co.	260,000	N.P.	$1	12-21-36	$1.00	21	13¼	14⅛	3¾
51½	46	4,500	51½	50	51¼	Buckeye Pipe Line Co.	200,000	$50	$1Q	3-15-37	3.25	50	39¾	42½	30½
2¾	2⅛	5,400	2⅜	2⅛	2⅛	Carib Syndicate	799,020	25c	....	.....	....	4⅞	1⅞	4¼	1⅝
115½	110¼	500	115½	112	113	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	3-29-37	7.00	124¾	105	157	115
5⅜	4⅛	54,900	4½	4⅛	4⅛	Cities Service	37,804,394	N.P.	....	6-1-32	....	7⅜	3	3¼	¾
4⅝	3	14,900	3¾	3	3½	Cosden Oil	399,687	$1	....	.....	....	4½	1½	1½	¼
38	31⅞	6,400	35	31⅞	33⅞	Creole Petroleum	6,974,356	$5	25cSA	12-15-36	.50	39	19⅞	23¾	10
18⅝	16	900	17⅞	17	17	Darby Petroleum	351,390	$5	25cSA	1-15-37	.50	18⅛	9	8⅞	4
7⅞	5¼	3,700	6⅝	6⅛	6¼	Derby Oil & Refining	263,162	N.P.	....	.....	....	6¾	1⅞	2	¾
47¼	46½	50	45½	45½	45½	Eureka Pipe Line	50,000	$50	$1Q	11-2-36	4.00	47½	38½	38	33¼
63½	56	7,400	58¼	56	56¾	Gulf Oil Corp.	9,076,202	$25	25cQ	4-1-37	1.50, 100% Stk.	59	36	74¾	50¼
87	77½	7,100	86	82⅝	83¾	Humble Oil & Refining	8,923,935	N.P.	37½cQ	4-1-37	1.50	80	57	64	44
23	21	10,400	23	22⅛	23	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-1-36	1.25	24½	19¾	22½	15⅜
13⅛	7¾	4,300	13⅛	11⅜	12⅝	Indiana Pipe Line	300,000	$10	20c Spl.	12-17-36	.80	9¾	5½	6⅛	3⅝
38	33⅜	18,100	38	36½	37¾	International Petroleum	14,247,088	N.P.	$1.25†‡	12-1-36	2.50	39⅝	32⅝	39¾	28
15¼	12⅛	9,800	13¼	12⅛	12⅞	Louisiana Land & Exp.	3,000,000	N.P.	10cQ	3-15-37	.50	15⅜	9⅞	11⅜	4⅜
19½	16⅛	1,500	18½	17¾	17⅞	Lion Oil Refining	270,000	N.P.	25cQ	12-26-36	.75	17¾	7⅜	8⅛	3½
14¼	11⅝	5,100	12⅞	12¾	12¾	Lone Star Gas	5,382,723	N.P.	20c	4-20-37	.60	14¼	9⅞	10⅞	4½
7⅜	6	3,600	7⅜	7⅛	7¼	Mountain Producers	1,682,182	$10	30cSA	12-21-36	.60	8⅜	5	5⅜	4⅛
19½	17½	5,100	18	17½	17¾	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-37	1.00	23	17⅜	20	11¾
11⅞	10	800	11⅞	11	11⅛	National Transit	500,000	$12.50	35cSA	12-15-36	.75	15¾	9¼	10⅝	6¾
6	4¾	700	5½	5⅜	5½	New Bradford Oil	1,445,202	$5	15cSA	4-15-37	.10	4⅝	2⅞	3¼	2
5	3½	1,900	3⅝	3½	3½	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	.01	6⅝	1⅝	2½	1
5¼	5⅛	No sales ..	..	..	..	New York Transit	100,000	$5	15cSA	10-15-36	.35	6¼	4¼	4⅞	3
9½	7½	400	9	8¾	9	Northern Pipe Line	120,000	$10	35c	1-2-37	.40	9¾	4⅞	8	5¼
9⅝	6¾	38,300	7⅜	6¾	7	Pantepec Oil	1,608,700	N.P.	....	.....	....	10⅛	3¼	4⅜	1¼
13¾	10½	1,500	11¼	10½	10⅝	Root Petroleum Co.	336,045	$1	25c	11-2-36	.50	19¼	4½	5	1½
6½	4¼	1,100	5⅛	4⅞	5⅛	Ryan Consolidated	296,931	N.P.	....	.....	....	4¾	1⅞	2½	⅝
48	44	1,900	46¾	45½	46¾	South Penn Oil	1,200,000	$25	90c†	12-29-36	2.60	44	32½	34½	21⅝
6⅝	5	400	6⅛	5¾	6⅛	Southern Pipe Line	100,000	$10	20cSA	3-1-37	.25	7⅞	3¼	5	3⅞
42	38	200	39	38¼	39	South West Penna. Pipe Lines	35,000	$50	$1Q	10-1-36	13.00	60	44	56	44¼
20⅜	19¼	4,800	19⅞	19¼	19⅜	Standard Oil of Kentucky	2,604,790	$10	25cQ	3-15-37	1.35	23⅜	17⅛	24	18
13¼	11½	600	13½	13	13¼	Standard Oil of Nebraska	188,403	$25	25c	3-29-37	.25	14⅝	11	12	7¾
43½	33¼	6,000	43½	40¾	42¼	Standard Oil of Ohio	753,740	$25	25cQ	3-15-37	2.00	40	21¾	23⅝	11½
4⅞	4	18,100	4⅞	4¾	4¾	Sunray Oil	1,910,748	$1	5c	12-21-36	.10	5	2⅝	2¾	⅞
7⅝	6⅛	1,400	6⅞	6½	6½	Texon Oil & Land	336,028	$2	15cQ	12-28-36	.60	9¾	5⅜	6⅞	5

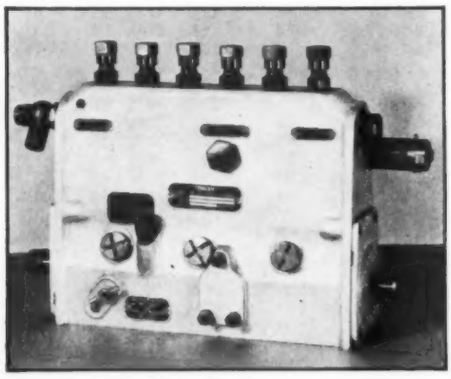
*Ex-dividend. †Includes extras. ‡Payable in Canadian funds. §New stock.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

NEW OR IMPROVED EQUIPMENT

Injection Fuel-Pump for Diesel Engines Offered by Timken

To meet the demand for a high-speed solid injection fuel-pump for diesel engines, the Timken Roller Bearing Co., Canton, Ohio, has announced



two sizes of multiple-unit, integral camshaft pumps, one using a 4-9 mm. range of plunger sizes and the second a 5-11 mm. range. At present these pumps are being made for 1-, 2- and 6-cylinder engines.

Three years of laboratory development, followed by a year of testing in the field on commercially operated diesel trucks, buses and tractors, indicates that these pumps have both efficiency and stamina. They are of the cam-operated helical plunger type, the metering being adjusted at the factory and sealed. At the lowest position of the plunger the cylinder receives a charge of oil from the feedline, which is kept filled by a feedpump connected to the fuel-tank. Delivery of the fuel to the engine starts as soon as the piston covers the inlet port and ends when the upper helical edge of the annular groove in the piston opens the overflow or bypass port on the opposite side of the pump cylinder wall, releasing the pressure to the discharge-line. The effective delivery stroke of the piston may be regulated by turning the piston in its cylinder or barrel to vary the point of the delivery stroke in which the overflow port is uncovered.

These pumps are driven by constant-velocity cams. Thus the delivery speed of the fuel entering the combustion chamber of the engine is maintained constant at a speed adapted to the rate of combustion, thereby increasing the engine efficiency and fuel economy. The deceleration portion of the motion comes late in the stroke, thus permitting the use of a lighter spring and reducing the spring load between the tappet and the cam. All the pumps are made to fit standard bases, and all connecting parts conform to standard dimensions. All parts are made on the American production plan, being interchangeable and easily replaced when necessary direct from conveniently located stocks.

Bulletins, Booklets and Other Literature for the Trade

Pipe line bridges are described and illustrated in a new bulletin issued by the Pittsburgh Des Moines Steel Co., 3419 Neville Island, Pittsburgh, Pa.

As a guide to efficient application of industrial packings for specific purposes the United States Rubber Products, Inc., 1790 Broadway, New York, has issued a 112-page manual. The departments include sheet packings, gaskets, rod and plunger packings, hydraulic packings, flax and jute, locomotive and special oil-well rotary-drilling packings, pump-valves, and miscellaneous packings and engineering sections.

An attractively illustrated booklet of 64 pages, obtainable from the International Harvester Co., Chicago, discusses precision methods employed by the company in building Tractractors for various uses.

The new recording round-chart potentiometer, the Pyromaster, announced by the Bristol Co., Waterbury, Conn., is described in bulletin No. 482. This bulletin gives drilling dimensions, chart lists, and other engineering data pertaining to the Pyromaster.

A beautifully printed 24-page booklet ready for distribution by the Goetze Gasket and Packing Co., New Brunswick, N. J., tells about a comparatively little-known industry, the design and manufacture of modern gaskets for sealing joints against temperature, pressure and corrosion. By way of indicating the fiftieth anniversary, the cover is in gold.

Corrosion problems of various kinds are discussed in the current issue of Nickelsworth, published by the International Nickel Co., 67 Wall Street, New York, and distributed through suppliers of Monel and rolled nickel.

L. L. Mitchell Is Now Treasurer of Lucey Products Corp.

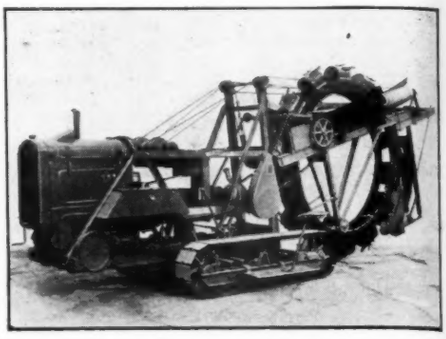
Linus L. Mitchell has been appointed treasurer of Lucey Products Corp., Tulsa. Mr. Mitchell's rise in the supply business has been swift. He

LINUS L. MITCHELL

joined Lucey Products Corp.'s credit department in May, 1934, and later became assistant treasurer. Previously he had been connected with Tulsa banks since graduation from Oklahoma A. and M. College in 1929. Lubbock, in the plains area of West Texas, is his home. He is a member of Beta Theta Pi fraternity.

New Ditcher Designed to Meet Demands of Pipe Line Work

The most recent addition to the Cleveland Trencher Co.'s line of trenching and ditching equipment is the Model 110, constructed on the design of full crawler ditchers, used by the com-



pany in all models manufactured by the company since 1921. The machine is especially built to meet field conditions encountered by pipe line companies and contractors. It embodies features which are said to assure high capacity and continuity of performance.

The trench-cutting capacities are from 10½ inches to 23 inches wide and to a maximum of 5½ feet depth. By simple lever-shifting, a multiplicity of digging and traction speeds, in combination with different wheel speeds, are available to the operator, enabling him to cut at maximum speed for the work at hand. The digging speeds range from 1½ inches to 33 feet a minute. The top road speed is 3 m.p.h. Reports from machines on recent jobs in various sections of the country working in all kinds of soil give an average of 250 feet to 750 feet of trench dug per hour for the entire duration of the job. Power is furnished by a 325-cubic-inch gasoline engine.

Some of the many features found in this ditcher are unit type construction; steel-enclosed, dirt-sealed drives; differential brake steering; quick-shift arc-type conveyor; close-up view of digging action from operator's platform; use of over 90 antifriction bearings; alloy, heat-treated steels.

Wheel-mounted buckets of rigidly mounted design do the digging. These buckets, as well as all cutting units, are constructed to insure maximum digging capacity with minimum expenditure of power. Special equipment handles the stickiest soils.

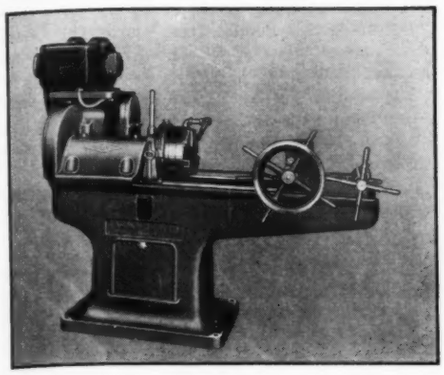
Air Reduction Personnel Changes

H. F. Henriques and J. J. Lincoln, Jr., have been appointed assistant general sales managers of Air Reduction Sales Co., with headquarters in Cleveland, O., and Pittsburgh, Pa., respectively. J. M. Driscoll has been appointed acting manager in Cleveland; S. D. Edsall, acting district manager of the Pittsburgh district; A. W. Brown, assistant railroad sales manager, with headquarters in New York. J. F. Pryor, formerly assistant to the general sales manager, has been made vice president of the Magnolia Airco Gas Products Co., which handles all of Air Reduction's activities in Texas. His headquarters will be in Houston.

Bulletin 71, announced by the Bridgeport Machine Co., Wichita, Kans., contains complete information concerning the company's mechanical wire-line spooler for installing the drilling-line on the bullwheels and removing it.

Improved Threading Machine Is Put on Market by Landis

An improved design of the Landis 2-inch threading machine is now being marketed by the Landis Machine Co., Waynesboro, Pa. Improve-



ments apply to both the belt- and motor-driven machines. Instead of using a cone pulley, power is delivered to the belt-driven machine through tight and loose pulleys mounted on the main driveshaft to be driven directly from a lineshaft and without a countershaft. A belt-shifter is provided for starting and stopping the machine.

Speed changes are effected through a pickoff gearbox conveniently located on the headstock. The machine is regularly supplied with gears to cover a range of 31 to 118 r.p.m. With the exception of the lowest two speeds, each set of gears will provide two speeds by reversing the gears. A speed change plate is attached to the gearbox showing the proper gears for the various speeds.

The motor-driven machine, shown in the accompanying illustration, has the motor mounted on a plate attached to the top of the headstock. The motor is connected to the gearbox by a silent chaindrive, assuring a smooth and powerful drive.

The bed of the machine has been strengthened by making it thicker and adding more and heavier reinforcing webs. The headstock is mounted directly on the top of the bed, adding to the rigidity of the machine. The coolant pump is mounted close to the bed, avoiding overhang and interference with floor space.

The 2-inch Landis threading machine is furnished with either the Landis standard rotary diehead or the heat-treated Lanco head. The machine is equipped with the same efficient carriage and vise. It can be furnished either with or without a leadscrew. While the machine is slightly heavier than the old machine it requires practically the same floor space.

Warren H. Jones Dies

Warren Howland Jones, 61, secretary, assistant treasurer and director of the Westinghouse Electric & Manufacturing Co., died of pneumonia recently. C. W. Pomeroy was elected to succeed him as secretary.

Here and There With Men Who Manufacture Equipment

The Charles N. Hough Manufacturing Co., Franklin, Pa., which makes oil-well specialties and pumping equipment, has moved its Tulsa branch into a reconditioned brick warehouse building at 1-5 North Frankfort Ave. Six salesmen cover the Mid-Continent territory.

The Lincoln Electric Co., Cleveland, Ohio, has moved its Cincinnati, Ohio, office to Room 602, American Building, Central Parkway at Walnut Street.

Bruce B. Wallace, sales engineer, has joined the Los Angeles staff of the Foxboro Co., Foxboro, Mass., maker of industrial precision instruments.

Bulletins announced by the Gardner-Denver Co., Quincy, Ill., describe and illustrate the FX power pumps and the company's new line of horizontal duplex power slushpumps for core-drilling and geophysical service.

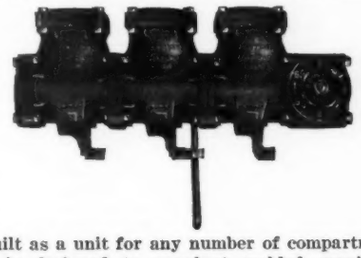
The Geo. P. Reintjes Co., Kansas City, Mo., has appointed J. R. Goodwin, of the Dunbar Engineering Co., 103 Park Avenue, New York, as its representative for the sale of its sectionally supported walls and arches.

Patterson-Ballagh Wins Patent Suit

Declaratory judgment in favor of Patterson-Ballagh Corp. was handed down in the U. S. District Court, southern district of California, in a patent suit involving the expander tool used in applying rubber protectors. William I. Bettis, plaintiff, sought a declaratory judgment to invalidate the patent. Federal Judge Leon Yankwich declared that "the letters patent No. 1,965,876 are good and valid in law and that the same were lawfully issued on July 10, 1934, and that the invention covered thereby was not abandoned by the inventor thereof and was not in public use more than two years prior to the time of the filing of the application for said patent."

Manifold Prevents Opening of Compartments Accidentally

A tank-truck manifold of new design has been announced by the Ralph N. Brodie Co., for trucks having two to six compartments. Its use prevents accidental opening of more than one compartment at a time. Application is said to include both gasoline and fuel oil trucks. The Brodie manifold

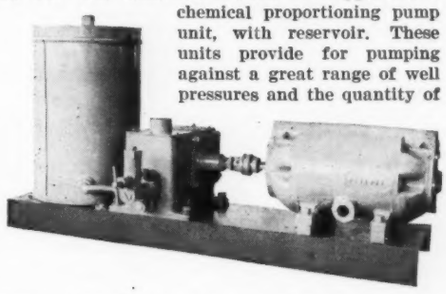


is built as a unit for any number of compartments and is designed to supplant welded manifolds, valves and fittings.

The interlocking operation keeps all compartments closed and locked except the one being drawn upon. Accidental opening of a compartment or the drawing of air from an empty one is avoided. The manifold is of free-flow design, completely built to save space.

Rotary Engine Uses Gas That Otherwise Would Be Wasted

A new rotary engine, for use with compressed air or gas, has been announced by the Reed Roller Bit Co. The illustration shows the type No. 1 chemical proportioning pump unit, with reservoir. These units provide for pumping against a great range of well pressures and the quantity of



chemical pumped may be adjusted to any value. They will operate at pressures up to 300 pounds per square inch and with speeds up to 2,000 r.p.m. Satisfactory operation may be had at any pressure between 2 pounds per square inch and 300 pounds per square inch. With 45 pounds per square inch pressure these engines are said to develop 1 horsepower.

Owing to their use of gas from wells which otherwise would be wasted, the engines have found favor as a prime mover for pumps, for circulating salt water, etc. Other uses are for driving lubricators, rotary circulating pumps, centrifugal pumps, bug blowers, etc.

The Reed rotary engine, type No. 2, for use with either air, gas or steam, is also offered. These engines, in addition to the uses for the type No. 1, are suitable for driving shale-shakers, light handreels, etc.

Bantam Company Changes Name

The Bantam Ball Bearing Co. of South Bend, Ind., has changed its name to describe more clearly its present day production. The new name is the Bantam Bearings Corp. The company is a subsidiary of the Torrington Co., of Torrington, Conn.

The Martin-Decker Corp., Long Beach, Calif., has issued a folder on its new Clipper model weight-indicator, designed to meet the demands of modern drilling for accuracy, strength, sensitivity and flexibility.

SALESMEN FOR IDECO HOLD TWO-DAY CONFERENCE

A two-day conference of Mid-Continent and Gulf Coast salesmen was held recently in Beaumont, Tex., by the International Derrick & Equip-

Front row: L. L. Powell, C. M. Powell, C. G. Booker, B. S. Wellman, L. J. Brown, B. Boykin, Jr., E. M. Eddleman, J. M. Aitken, C. R. Athy, E. M. Jensen, L. R. Spencer. Back row: Larry Waterbury, Jr., A. P. Texada, Jr., F. E. Anderson, F. W. Ulin, R. Lee Chance, C. D. Lambert, J. A. Tidball, Cobb Turner, E. C. Skinner, L. C. Bodemann, F. E. Suder, Charles E. Hamlin, D. D. Perry, M. T. McGriff, Dan A. Fell, T. F. Neeson, D. D. Deason, G. E. Shoup, William C. Cook, Tom Bergin, W. S. McEwen, C. A. McClelland, and C. J. Colby.

ment Co. E. M. Eddleman, vice president in charge of sales, directed the activities. The main address was given by L. J. Brown, president of International-Stacey Corp., of which the International Derrick & Equipment Co. is a division. B. S. Wellman, executive vice president and director, was the principal speaker at the banquet. Other executives and department heads led discussions.

Oil Man's Calendar

March

10-11—Indianapolis, Indiana Independent Petroleum Association Spring Convention and Refiners' and Suppliers' Exhibit, Hotel Severin.

12—Oklahoma City, Okla., Interstate Oil Compact Commission meeting.

15-19—Philadelphia, Pa., National Oil Burner & Air Conditioning exposition and convention, Convention Hall, Commercial Museum.

17—Wewoka, Okla., Fourteenth Annual Oil Jubilee.

17-19—Los Angeles, Calif., A.A.P.G. annual meeting.

23—New York, Oil Trades Association of New York.

April

1-2—Dallas, Tex., American Petroleum Institute, Southwestern District, Division of Production, Baker Hotel.

7-9—Birmingham, Ala., American Institute of Mining and Metallurgical Engineers, Open Hearth Conference.

8-10—Shreveport, La., Petroleum Industry Electrical Association.

13—Los Angeles, Calif., American Petroleum Institute, Division of Production, Pacific Coast district, Biltmore Hotel.

15-16—Cleveland, Ohio, 34th semiannual meeting National Petroleum Association, Cleveland Hotel.

26-28—Hot Springs, Ark., Western Petroleum Refiners Association, annual meeting, Arlington Hotel.

May

6-7—Columbus, Ohio, American Petroleum Institute, Division of Production, Eastern district, Deshler-Wallick Hotel.

10—Kansas City, Mo., Spring meeting Natural Gas Department, American Gas Association.

19-21—Tulsa, Natural Gasoline Association of America, annual meeting, Hotel Tulsa.

23-27—Pittsburgh, Pa., National Association of Purchasing Agents (Oil Company Buyers' Group) annual convention, William Penn Hotel.

June

1-3—Colorado Springs, Colo., American Petroleum Institute, mid-year meeting, Broadmoor Hotel.

7—Kansas City, Mo., Oil Field, Gas Well-Refinery Workers of America.

10-12—Pennsylvania Grade Crude Oil Association, annual meeting, on Great Lakes S.S. "Seandbee," sailing from Buffalo, N. Y.

11—Santa Fe, N. M., Interstate Oil Compact Commission meeting.

14-19—Paris, France, Second World Petroleum Congress, during International Exposition.

25-26—Dallas, Tex. National Oil Scouts Association, annual meeting, Baker Hotel.

June—July

28-July 2—New York, American Society for Testing Materials, fortieth annual meeting, Waldorf-Astoria Hotel, together with fourth A.S.T.M. exhibit of testing apparatus and related equipment.

October

11-16—Houston, Tex., Oil-World Exposition.

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Box 13, Alanreed, Gray Co., Texas.

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

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Midland, Texas

Oil Industry Printing

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We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

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To Classified Users—

The Annual Refinery Issue of The Oil and Gas Journal will be published on March 25th.

It will be one of the finest issues ever published and will be preserved for years as a handbook on refining. If you buy or sell used refinery equipment you will want to be represented with a classified ad in this outstanding issue.

Send us copy for your ad NOW.

Classified Department

THE OIL AND GAS JOURNAL
TULSA, OKLAHOMA

Ranches and Farm Lands

Farm Lands for sale cheap near drilling. Not leased having been in bankruptcy. Talco field close. E. M. Adams, Clarksville, Texas.

Equipment Wanted

WANTED — Two Cooper Compressor Cylinders and Pistons between 10½" and 11½" bore by 20" Stroke. To fit 160 H. P. horizontal gas engine driven Compressor. Might consider cylinders that need reboring. State price and weight in reply. Have 7½" cylinders for above engine in excellent condition. Will consider trade. Address P.O. Box 142, Ashland, Ky.

Incorporations

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

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MAILING LISTS
Of royalty investors, by deed, from pipe line company records, in every State, including Okla., Kan., Tex., La. and Ark. Also, lists of active retail royalty brokers and investing royalty companies. Lists made special. Please specify. 15 years experience.
OIL INDUSTRY MAILING LIST CO.
909 Tulsa Loan Bldg., Tulsa, Okla.

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Porosity-Permeability-Saturation Tests.

Situations Wanted

GRADUATE Mechanical Engineer, 36, familiar with oil feild and Refinery Equipment, experience in U. S. A. and abroad, seeks connection with reliable company. Position in Latin America considered. Address Box H-663, The Oil and Gas Journal, Tulsa, Oklahoma.

NINE years' experience purchasing, field material man, inventory and production clerk. Six years material and oil accounting. Address Box H-676, The Oil and Gas Journal, Tulsa, Oklahoma.

Refinery man—chemical engineer, 10 years' experience in refinery operations, lube oil manufacturing and blending, grease manufacturing. At present employed by major oil company. Desires new connection. Will go anywhere. Address Box H-673, The Oil and Gas Journal, Tulsa, Oklahoma.

Eastern man, age 45, fifteen years experience Oil Well Supplies, now employed, desires position in purchasing or sales department. Address Box H-680, The Oil and Gas Journal, Tulsa, Okla.

Mechanical & Process Engineer; young, 15 years major contractors, refiners, industrials, diversified training; desires connection, sales, contractors, or work under major executive; eastern location preferred. Address Box H-681, The Oil and Gas Journal, Tulsa, Okla.

GRADUATE CHEMIST, single, 21, 1 yr. experience in refinery laboratory, seeks better position in Mid-Continent Region or abroad. Excellent scholastic record. References. Address Box H-683, The Oil and Gas Journal, Tulsa, Okla.

For Sale—Equipment

WANT TO BUY—STORAGE TANKS

From 5,000 barrel to 80,000 barrel inclusive. Wood roof tanks preferred.
Write your description and number of tanks you have to offer and where located. We will make you cash offer.

SONKEN-GALAMBA CORPORATION
64 North Second St. Kansas City, Kansas

Leases—Production

LEASES and drilling locations on geological structure near production in Illinois. Lock Box 12, Bethalto, Illinois.

OIL AND Gas Leases and royalty drilling blocks in South Arkansas in trend of development. Two sands now producing. John G. Wooten, P. O. Box 38, Prescott, Arkansas.

WANTED

Brokers-salesmen, for new lease offering around well soon to be drilled in the Permian Basin of West Texas. Splendid proposition for dealers.

W. J. DOBBS

632-3 Wilson Bldg. Dallas, Texas

ACTUAL drilling starting prior March 15, proven field, Central Louisiana. 1/5 interest offered for $2500, ½ interest $5000. Funds to be escrowed and paid on completion well to pay sand depth. Address Box H-675, The Oil and Gas Journal, Tulsa, Oklahoma.

ARKANSAS
Does not have any production (proration) restrictions. The opportunity for quick "payouts" is obvious. Investigate Royalty and lease opportunities in this state.
WILLIAM MONROE LAYTON
P. O. Box 411, Texarkana, Ark.
P. O. Box 949, Hot Springs, Ark.

Drilling operations on oil well in proven field Central Louisiana starting prior March 15, a 1/5 interest in the well offered for $2,500, a ½ interest for $5,000. Funds to be escrowed and to be paid only upon completion of well to pay sand depth in that field. Address Box H-685, The Oil and Gas Journal, Tulsa, Okla.

Help Wanted

WANTED—Manufacturing concern requires thoroughly experienced engineer in the design, construction and operation of refinery and gasoline plant equipment. Preferably one having sales ability. Give full details in all respects, connections over past 10 years, age, etc. Permanent if satisfactory. Replies confidential. Address Box H-674, The Oil and Gas Journal, Tulsa, Oklahoma.

Electrical Engineer or Electrical Construction Foreman, familiar with all phases oil field electrification including power plant construction. All details first letter. Address Box H-684, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Several young engineering school graduates of outstanding character and excellent personality to train for field work as Sales Engineers for well known manufacturer of industrial instruments and automatic control equipment. Candidates preferred who have had some industrial plant or public utilities experience and are under thirty and now free for quick transfers and extensive travel. Unusual opportunities for promotions. Write stating age, education, experience and salary desired. Address Box H-682, The Oil and Gas Journal, Tulsa, Okla.

Leases—Production

LOCATING OIL ON A PER CENT New fields located for a third of the oil. All expenses must be paid in advance. Loyal E. Scott, Consultant, Aurora, Mo.

LANDS Leases, Royalties, anywhere, bought, sold. Lands, $2 acre up. Leases 25c acre, up. Advise needs. American Investment Co., Houston, Texas.

NEW MEXICO, Chaves County, 1000 acre solid lease block. 9 years, 5c rentals, price 30c per acre. Roy G. Barton, Box 191, Clovis, New Mexico.

OIL Leases, Royalties, Real Estate, Drilling propositions in Proven, Semi Proven and Wildcat areas. W. T. Brown, Denton, Texas.

FOR SALE—2,000 acres producing gas, and potential oil lands, with oil and gas permits. Address Box 30, Havre, Mont.

LEASES near Paluxy-Trinity sand Oklahoma Ordovician tests drilling low price 100 for one bet. E. Croft, Proctor, Texas.

Have 5,000 acres in northern Zapata County, Texas, 10 year commercial lease 25c per annum rental, $1.00 per acre bonus. Address P. O. Box 974, San Antonio, Texas.

FOR LEASE—E½, SE¼, Sec. 16, Twp. 18N, R. 8E., Creek Co., Okla. Producing offset well one side and several producing wells opposite side in ¼ mile. V. D. Machir, 331 North Hardesty Ave., K. C., Mo.

Wanted associate financially able. I can get several semiproven shallow drilling blocks central Texas for drilling contract. I supervise operations for ¼ int. and living expenses; have had years of experience, can furnish excellent recommendation. Middle age and sober and can deliver the goods. O. W. Gray, Eastland, Texas.

WANTED IMMEDIATE DEVELOPMENT on 40 acres near Freer, Duval County, Texas, Section 250 H. B. Schleisenger Survey, proven territory. S. M. Melton, Cuero, Tex.

NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, New Mexico.

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We develop new oil properties. Now operating Vegas Dome, N. M. and Ojo Structure in Colo. with another highly geologized and recommended structure about ready to start. We sell leases only against our actual developments with diversification against our several operations. Do you want to connect with real developments? Write us.
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DIRECTED READER INTEREST
Your ad in these columns will be read by more oil-minded readers than in any other medium in the world. Direct your advertising to these readers through the regular use of this service.
THE OIL AND GAS JOURNAL
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When the need's for speed
IN STEEL CONSTRUCTION

If you want steel barges, a tank farm, oil refinery equipment, a gas holder or any other steel structure in a hurry—call on Bethlehem.

As the largest steel construction company in the world, this organization has unsurpassed facilities for the fabrication and erection of steel structures of any size or description. Rolling mills, plate mills, foundries and forging shops are closely co-ordinated with the construction division and can supply its needs without delay.

These construction facilities are directed by a staff of engineers who have worked on many of the major steel construction jobs of the present century—a combination that puts Bethlehem in a unique position when it comes to designing and carrying out jobs of any size.

BETHLEHEM STEEL

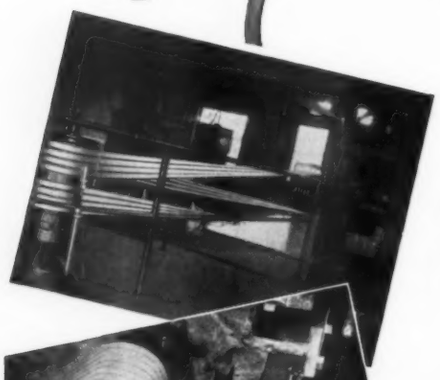
BETHLEHEM STEEL COMPANY

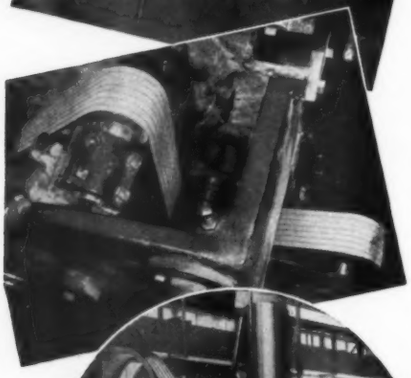
Two (2) Big Savings

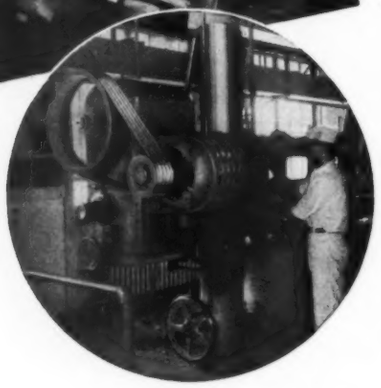
Due to the Concave Side

Bend any V-Belt as it bends in going around its pulley and here is what you will see:

The top of the belt, being under tension, grows *narrower.* The bottom *widens.* The sides of the belt *bulge out!* In a straight-sided belt, these stresses change the belt's shape so that it does not fit the sheave-groove—as shown in figure 1, below.







What Happens When a V-Belt BENDS

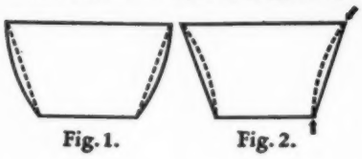
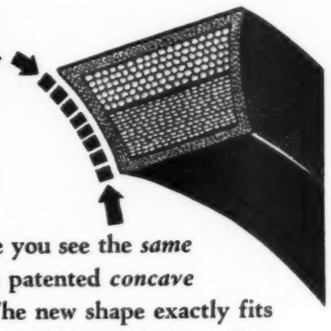


Fig. 1. Fig. 2.



Now look at figure 2. There you see the *same shape change* in a belt with the patented *concave side*—but what a difference! The new shape exactly fits the sheave groove. There is no side-wall bulge. *Two* savings result. (1) Uniform side-wall wear; *longer life!* (2) Full side-wall grip on the pulley saves slipping, saves belts, saves *power!*

The Gates Vulco Rope is the only V-Belt built with the patented concave side.

Engineering Offices and Stocks in All Large Industrial Centers.

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GATES VULCO ROPE DRIVES

The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription prices: Domestic, $6.00 a year; foreign, $7.00 a year. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Oklahoma, under the Act of March 3, 1879.

● What a worker! Wherever steel or iron is unprotected—or ill protected—Rust is ready to put in twenty-four hours a day at its work of destruction.

Keep Rust off *your* payroll. The sure way is to paint metal surfaces with Dutch Boy Red-Lead.

Paint made with Dutch Boy Red-Lead provides a solid, tough, tenacious coating—one that not only keeps out moisture but also resists the destructive action of other common causes of corrosion—such as gases, smoke and salt water.

Dutch Boy Red-Lead comes in both paste and liquid form, the latter including a quick-drying type for use when allowable drying time is short. The pigment in every case is pure red-lead that contains more than 97% Pb_3O_4, thus assuring easier application, higher spreading rate and a uniform film of greater density.

For complete information on protecting iron and steel against corrosion, send for our free booklet, "Structural Metal Painting." It covers such subjects as the conditions affecting the life of paint on metal, proper paint formulation, testing and judging the value of paint, estimating areas and costs.

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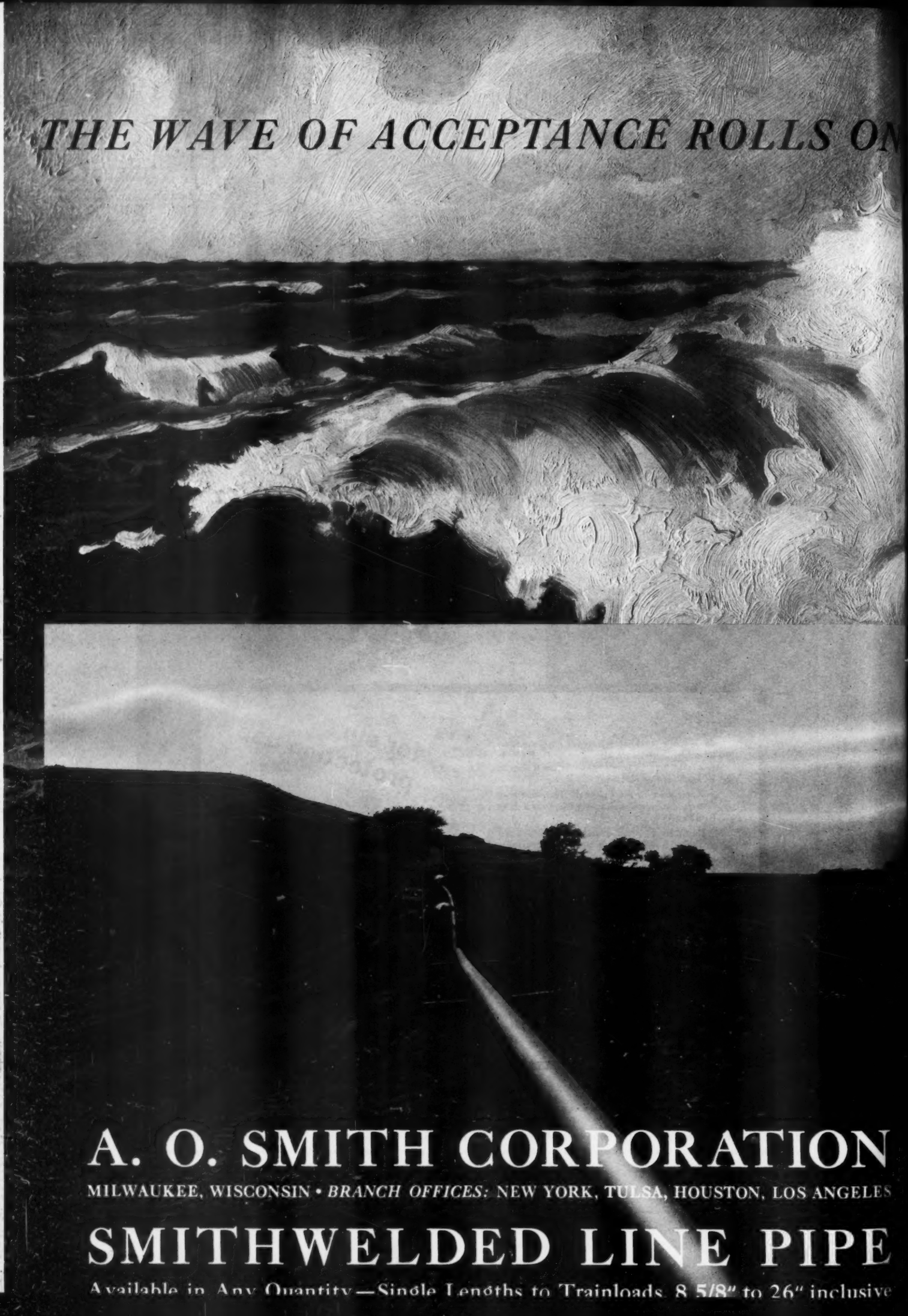

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MILWAUKEE, WISCONSIN • *BRANCH OFFICES:* NEW YORK, TULSA, HOUSTON, LOS ANGELES

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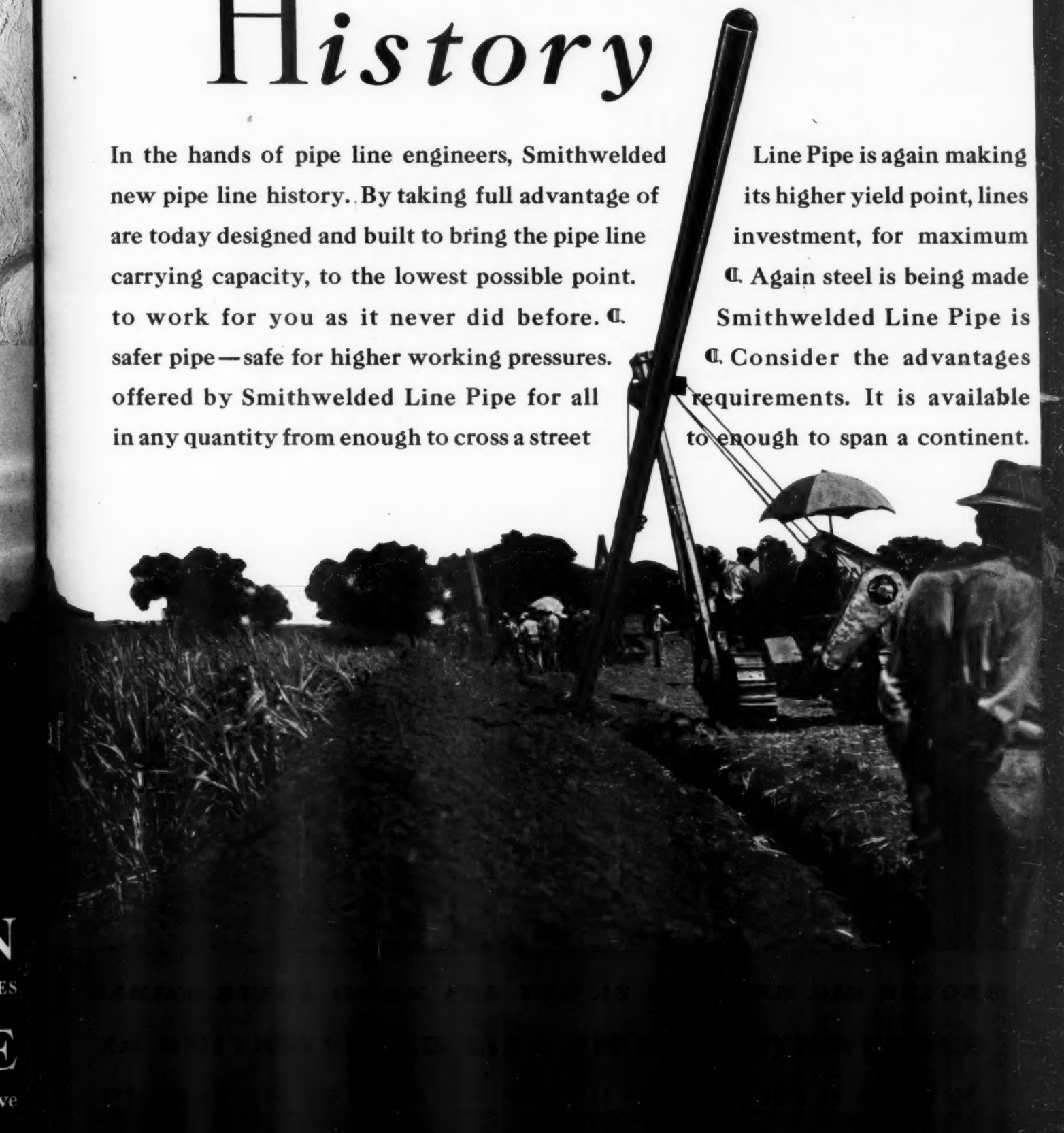
Available in Any Quantity—Single Lengths to Trainloads, 8 5/8" to 26" inclusive

Smithwelded Line Pipe is Making new pipe line History

In the hands of pipe line engineers, Smithwelded Line Pipe is again making new pipe line history. By taking full advantage of its higher yield point, lines are today designed and built to bring the pipe line investment, for maximum carrying capacity, to the lowest possible point. ¶ Again steel is being made to work for you as it never did before. ¶ Smithwelded Line Pipe is safer pipe—safe for higher working pressures. ¶ Consider the advantages offered by Smithwelded Line Pipe for all requirements. It is available in any quantity from enough to cross a street to enough to span a continent.



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No Crane valve becomes a regular catalog item until it has passed every test that Crane engineers devise.

No Crane valve becomes a regular Crane catalog item until its records "on the job" show that it has more than enough to do the work for which it is recommended.

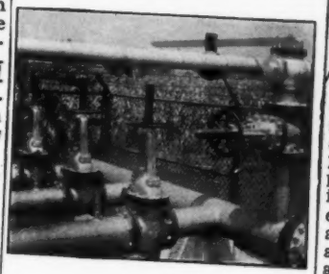
No valve or fitting leaves the Crane plant until it has passed a long series of routine tests.

That is why, month after month, "complaints, zero" is the only comment noted in so many columns on Crane department reports.

For most "new" valve problems Crane has solutions proved and ready for use. Look to your Crane No. 52 and other Catalogs for the details regarding over 38,000 items, tested in the laboratory and on the job. Use them whenever you need valves, fittings, pipe or accessories. CranEquip for satisfaction.

plied in the next few days.

CORROSION HOT
CORROSION COLD



CHICAGO, ILL., Feb. 17—The more corrosive action is studied the more it seems apparent that what happens in the laboratory is not necessarily what will happen in actual service. That does not diminish the value of laboratory studies, but it indicates the need of making certain how valves and fittings will stand up in the field before going too far in performance claims.

Crane continues to utilize the oldest, largest and best equipped testing laboratory in the industry to find out everything that can be found out about the behavior of metals under stress and strain, heat or cold, by laboratory methods. But Crane also continues to evaluate laboratory results by putting its products into actual service, at wells, in pipe lines, on tankers, at refineries. No valve or fitting designed by Crane is included in the regular Crane line until it has been given the hardest workouts that can be found—and has proved that it has what it takes to do the job for which it is recommended.

Another Crane value is the uniform excellence of its products. When you buy Crane valves you get exactly what you order. That is why Crane inspects, tests, and re-inspects at every step from the carload of raw material on the incoming siding to the moment before shipping the finished product.

Bring your problems to Crane. If there isn't a regular Crane valve which can handle your need, there is no better equipped organization to build exactly what you must have. CranEquip for satisfaction.

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VALVES, FITTINGS, FABRICATED PIPE, PUMPS, PLUMBING AND HEATING MATERIAL

You can't change the country - but you can change to

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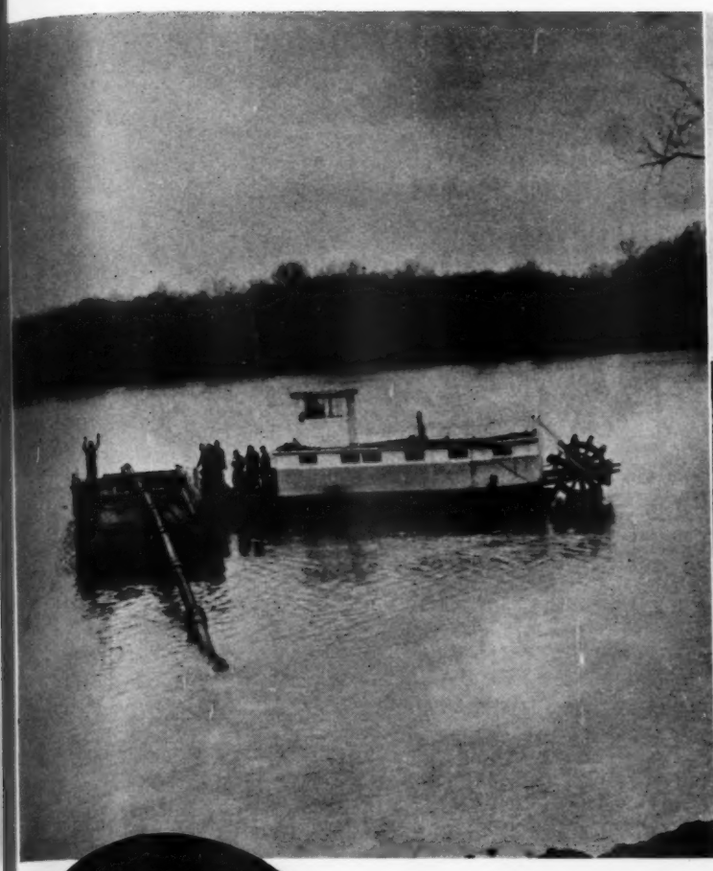

ELECTRIC WELD

HIGH YIELD POINT WITH HIGH DUCTILITY

LINE PIPE

● Humanity must be served—so pipe lines carry gas, oil and gasoline from points of production to points of consumption or distribution—across plains, through forests, under rivers, through swamps, over mountains, up canyon walls and down.

Oil and gas companies are in business to make money—so many of them use Republic Electric Weld Line Pipe in constructing their lines. More than 8000 miles is now in service.

Republic Electric Weld Line Pipe saves time and construction and maintenance expense on long and short lines in all parts of the country—because it is perfectly round—uniform in wall thickness and diameter—easy to bend and weld in the field—unusually strong—free from scale—and because it is available in sizes up to 16″ O. D. and in lengths up to 50 feet without mid-weld. Full information sent upon request.

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Republic Steel Corporation

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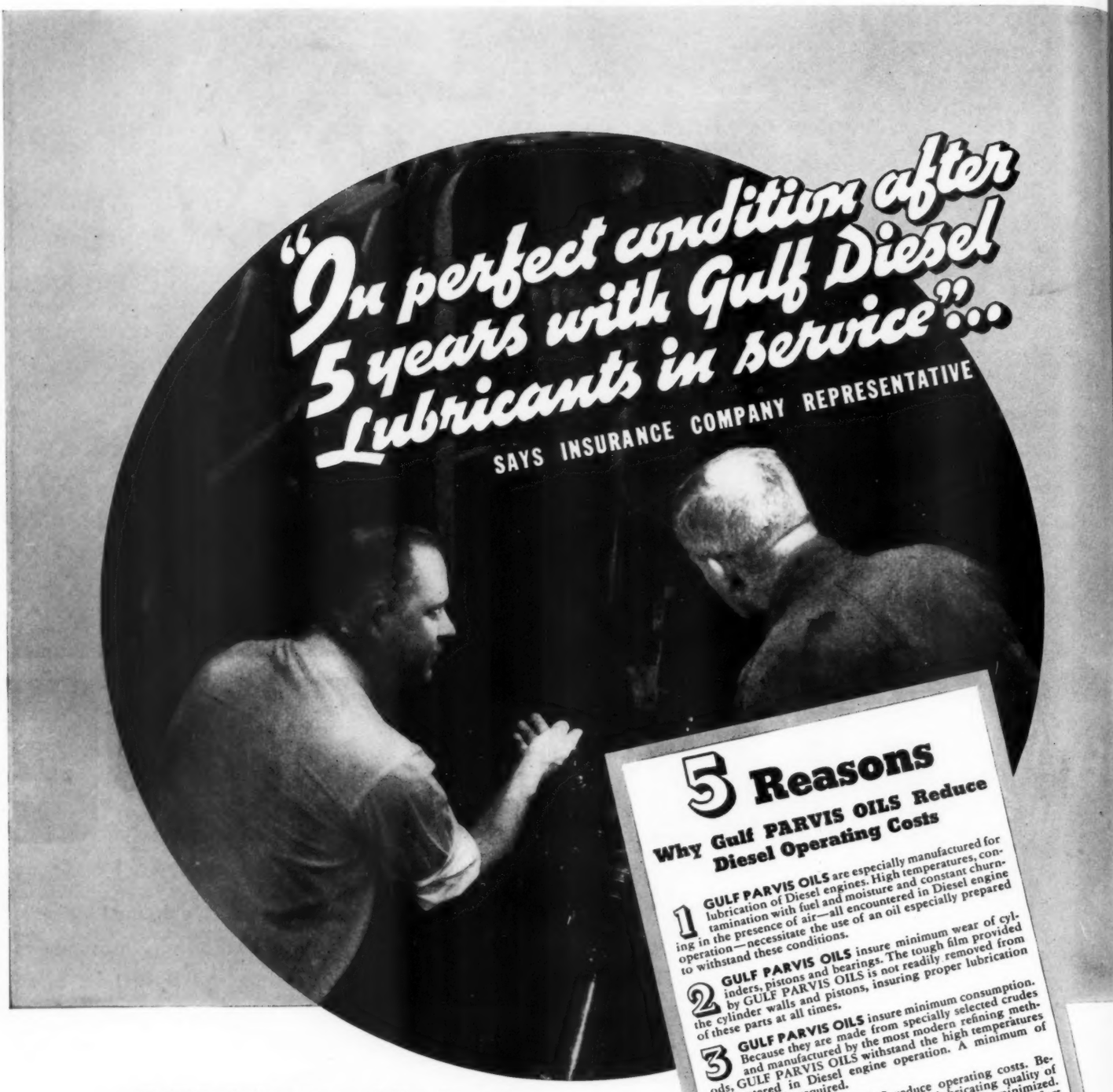


. . . Gulf Lubricants and Engineering Service Insure Lubricating Efficiency

"THIS engine has been kept in perfect condition with Gulf lubricants in service during the 5 years since its installation. I find only 1/1000" wear in the main bearings!" That is the statement of the insurance company representative who inspects this unit in a large plant at regular intervals.

There are three important reasons for this splendid record: First, the splendid work of the plant engineers. Second, the unparalleled quality of Gulf Diesel lubricants. Third, the cooperative service of the Gulf engineer with the men in the plant.

From Maine to Texas, Gulf lubricants and engineering service are helping Diesel operators make new records of efficiency. A Gulf engineer is always at your service.

5 Reasons

Why Gulf PARVIS OILS Reduce Diesel Operating Costs

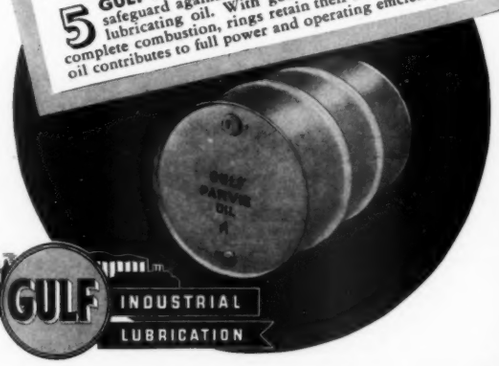
1 **GULF PARVIS OILS** are especially manufactured for lubrication of Diesel engines. High temperatures, contamination with fuel and moisture and constant churning in the presence of air—all encountered in Diesel engine operation—necessitate the use of an oil especially prepared to withstand these conditions.

2 **GULF PARVIS OILS** insure minimum wear of cylinders, pistons and bearings. The tough film provided by GULF PARVIS OILS is not readily removed from the cylinder walls and pistons, insuring proper lubrication of these parts at all times.

3 **GULF PARVIS OILS** insure minimum consumption. Because they are made from specially selected crudes and manufactured by the most modern refining methods, GULF PARVIS OILS withstand the high temperatures encountered in Diesel engine operation. A minimum of make-up oil is required.

4 **GULF PARVIS OILS** reduce operating costs. Because of the stability and high lubricating quality of these oils, wear and repair expense are minimized. Lower oil consumption and lower maintenance costs reflect substantial savings in over-all operating costs.

5 **GULF PARVIS OILS** are low in carbon content—a safeguard against carbon deposits resulting from the lubricating oil. With good atomization of fuel and complete combustion, rings retain their freedom. Thus, the oil contributes to full power and operating efficiency.



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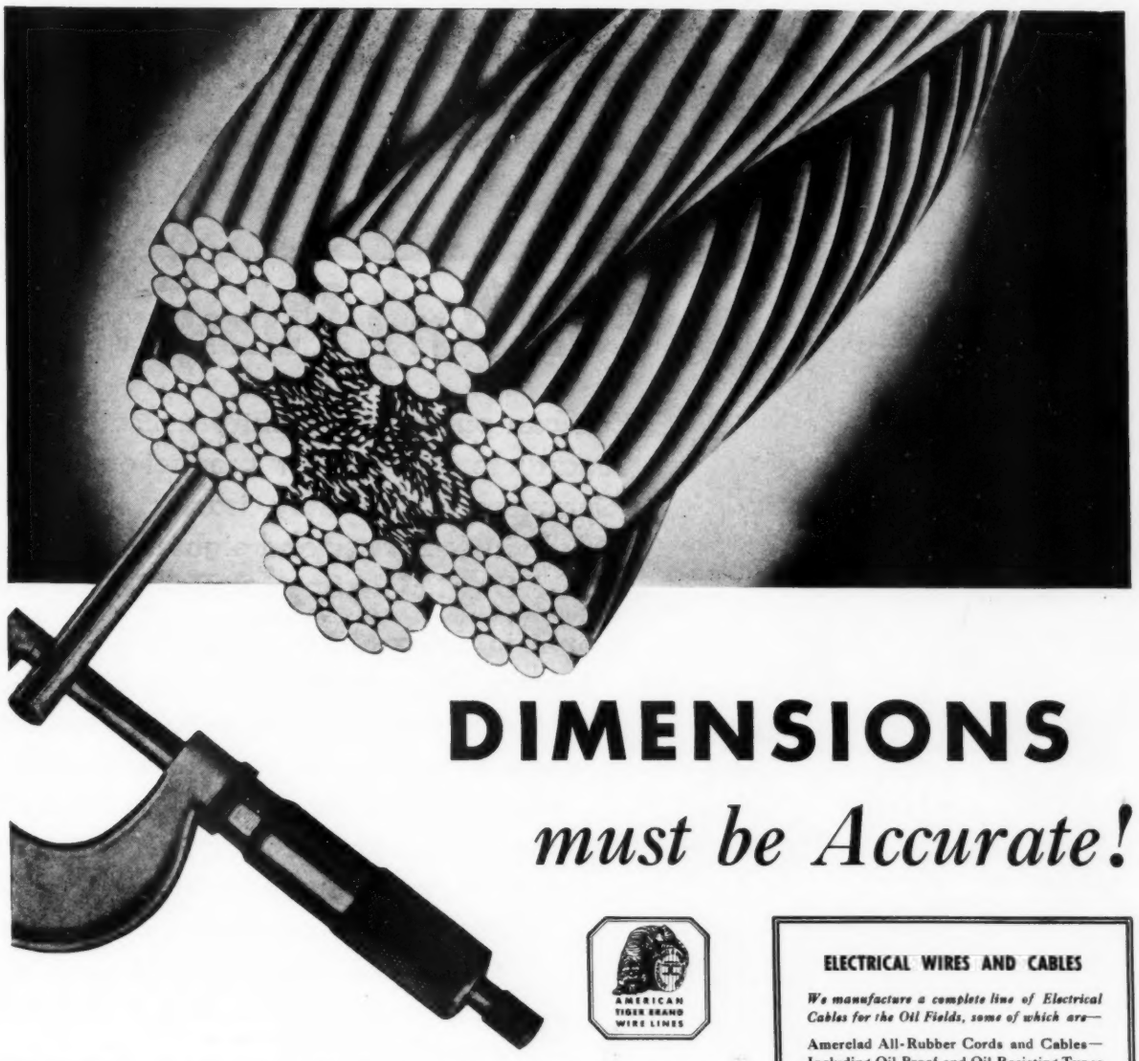
GENERAL OFFICES: GULF BUILDING, PITTSBURGH, PA.

GULF INDUSTRIAL LUBRICATION

Makers of that Good Gulf Gasoline and Gulflube Motor Oil



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ELECTRICAL WIRES AND CABLES

We manufacture a complete line of Electrical Cables for the Oil Fields, some of which are—

Amerclad All-Rubber Cords and Cables—Including Oil Proof and Oil Resisting Types · Rubber Covered Wire · Reliance URC Weatherproof Wire · Motor Leads · Switchboard Wires · Geophone, Seismograph and Electrical Prospecting Cables.

LIKE any complicated machine*, American Tiger Brand Wire Lines are precision-built. Dimensions must be accurate to insure the smooth working together of the many wires so they will handle your jobs efficiently.

Think how much you demand of wire lines—they must string or reeve easily and quickly . . . spool well . . . avoid whipping at high speeds . . . stand up under the terrific jerks of starting and stopping.

That is the kind of service you can expect from American Tiger Brand Wire Lines. They are the product of engineers who have specialized for years in their design and they are backed by more than 100 years of wire-making experience.

American Tiger Brand Wire Lines are available in either Standard (non-preformed) or Excellay (preformed) constructions.

*American Tiger Brand Wire Line is a machine, more complicated than many, fitting the definition "Any combination of mechanism for utilizing or applying power."

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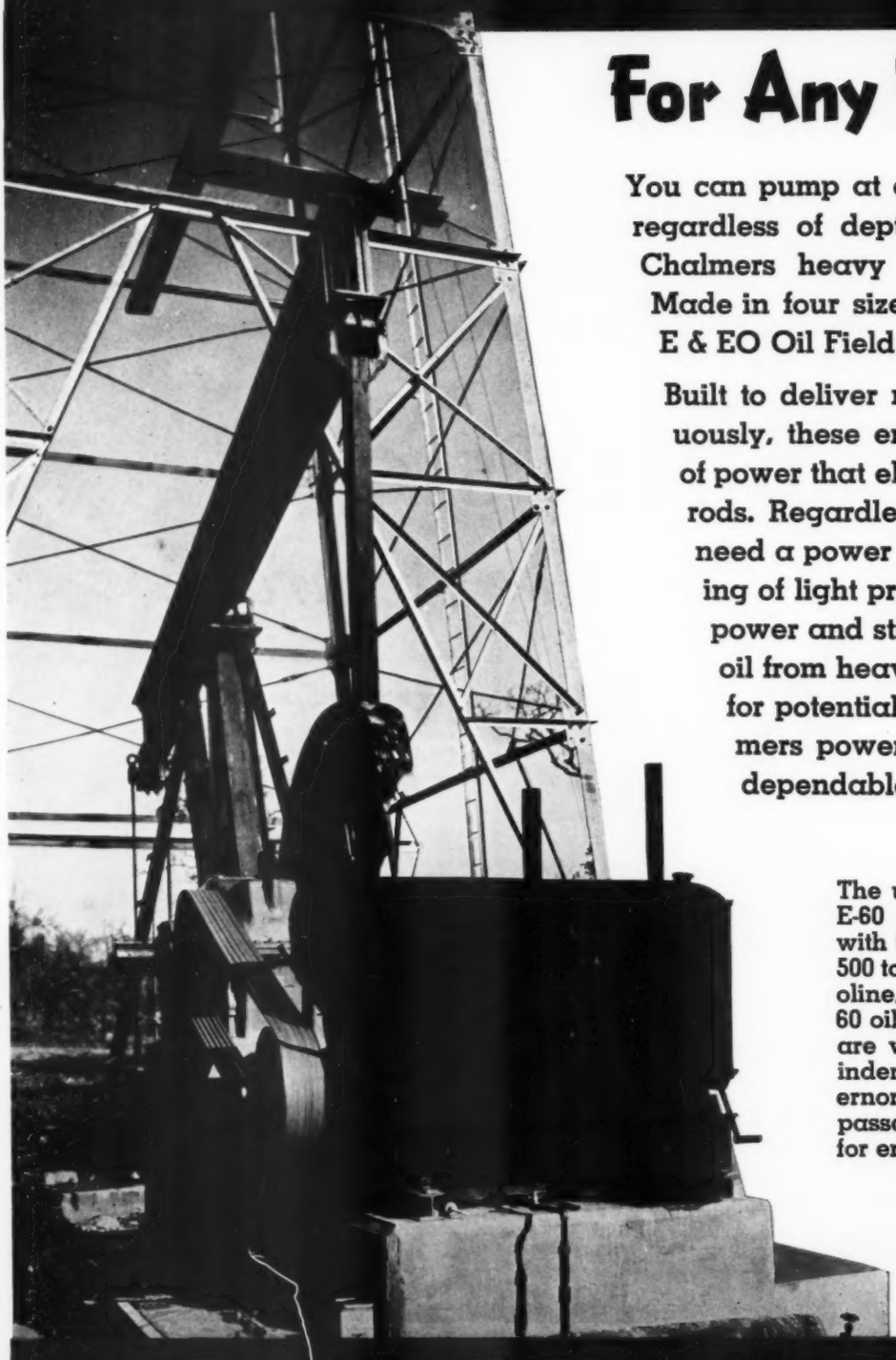
Power Engines

Allis-Chalmers E-60.

For Any Pumping Job.

You can pump at a profit practically any well, regardless of depth or production, with Allis-Chalmers heavy duty tractor type engines. Made in four sizes and eight models—L & LO, E & EO Oil Field Special, E & EO, U, & W.

Built to deliver maximum rated load, continuously, these engines supply a smooth flow of power that eliminates shock from power to rods. Regardless of your requirements, if you need a power for slow speed, steady pumping of light producers, a unit with sufficient power and strength to lift large volumes of oil from heavy producers, or fast pumping for potential taking, there's an Allis-Chalmers power engine that is durable and dependable.



The unit shown in operation is the A-C, E-60 Engine. Four cylinders, 5¼" bore with 6½" stroke. Motor operating speed 500 to 1,200 r.p.m. Burns natural gas, gasoline, or distillate. Also available as EO-60 oil engine. All Allis-Chalmers engines are valve-in-head, have removable cylinder liners, built-in full throttling governor, extra large water pump and water passages. Standard factory equipment for engine is complete—no extras to buy.

If interested we would like to send you information and illustrations of the complete line.

"LAD, THIS IS A PIPE DREAM COME TO LIFE!"

"RIGHT, POP. AND 'SHIELD-ARC' WELDED, IT WILL BE AN ECONOMY DREAM —FOR LIFE!"

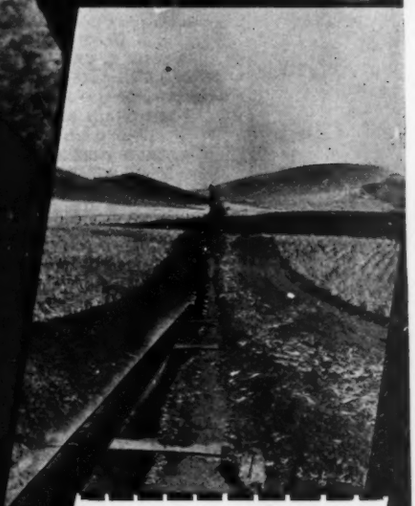
"AND this prophecy is no weather forecast.—*'Shield-Arc'* welds have been shown by thousands of engineers' tests to be even *stronger* and *more lasting* than mild steel itself. You hang up a service economy record the minute you specify the *'Shield-Arc'* process.

"But getting back to this world's speed record. Across flat and hilly terrain, through towns and farms—this 10-inch line did step out when it covered the 304 miles between Bakersfield and Martinez in 70 days.

"And to top that off—the line was tested under air pressure with soap suds, carefully and skillfully. The engineers pronounced it 100% OK.

"It just shows that QUALITY and SPEED can *both* be tops when dependable 'Fleetweld' and *'Shield-Arc'* welders are used. And here they were used exclusively.

"If you want record-breaking results on *any* metal fabricating job—in the field or in the refinery—use this Lincoln team. It's the welder of CHAMPIONS!"



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PRODUCES A STRONGER, MORE LASTING CONSTRUCTION FASTER, AT LESS COST

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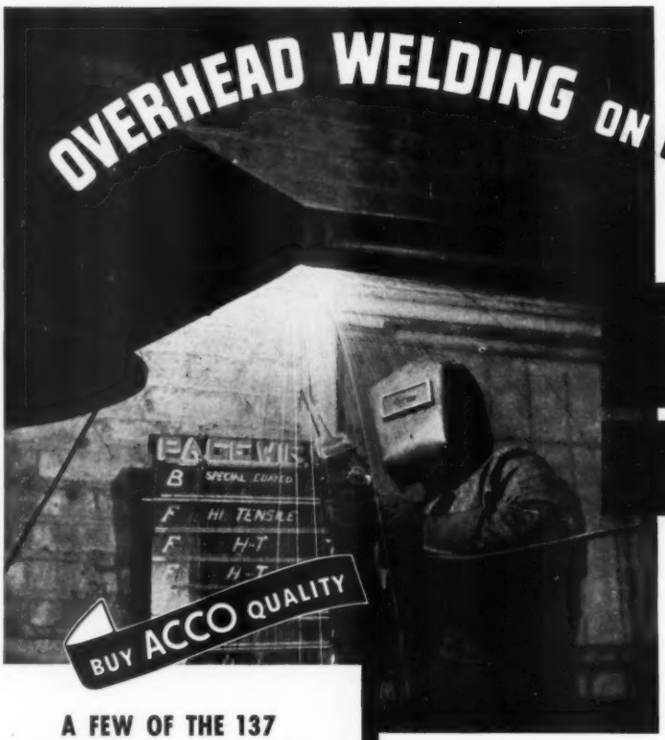

OVERHEAD WELDING ON BLOWER CONNECTION MADE EASY WITH PAGE HI•TENSILE "F"

SHIELDED ARC WELDING ELECTRODES

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● The installation of this ventilating system was made easier by welding connections in position. The problems encountered—overhead welding and fabricating materials of different gages—were solved with Page Hi-Tensile "F" Arc Welding Electrodes.

You will find Page Hi-Tensile "F" Electrodes the answer to many welding problems. This new Page Electrode is winning favor as an all-purpose rod—efficient for production, maintenance or shop welding. It is especially effective for high speed single pass welding. It operates on straight polarity, has unusually low spatter and slag loss, and satisfactorily welds the new alloy steels, such as Cromansil, Corten and H-T-50.

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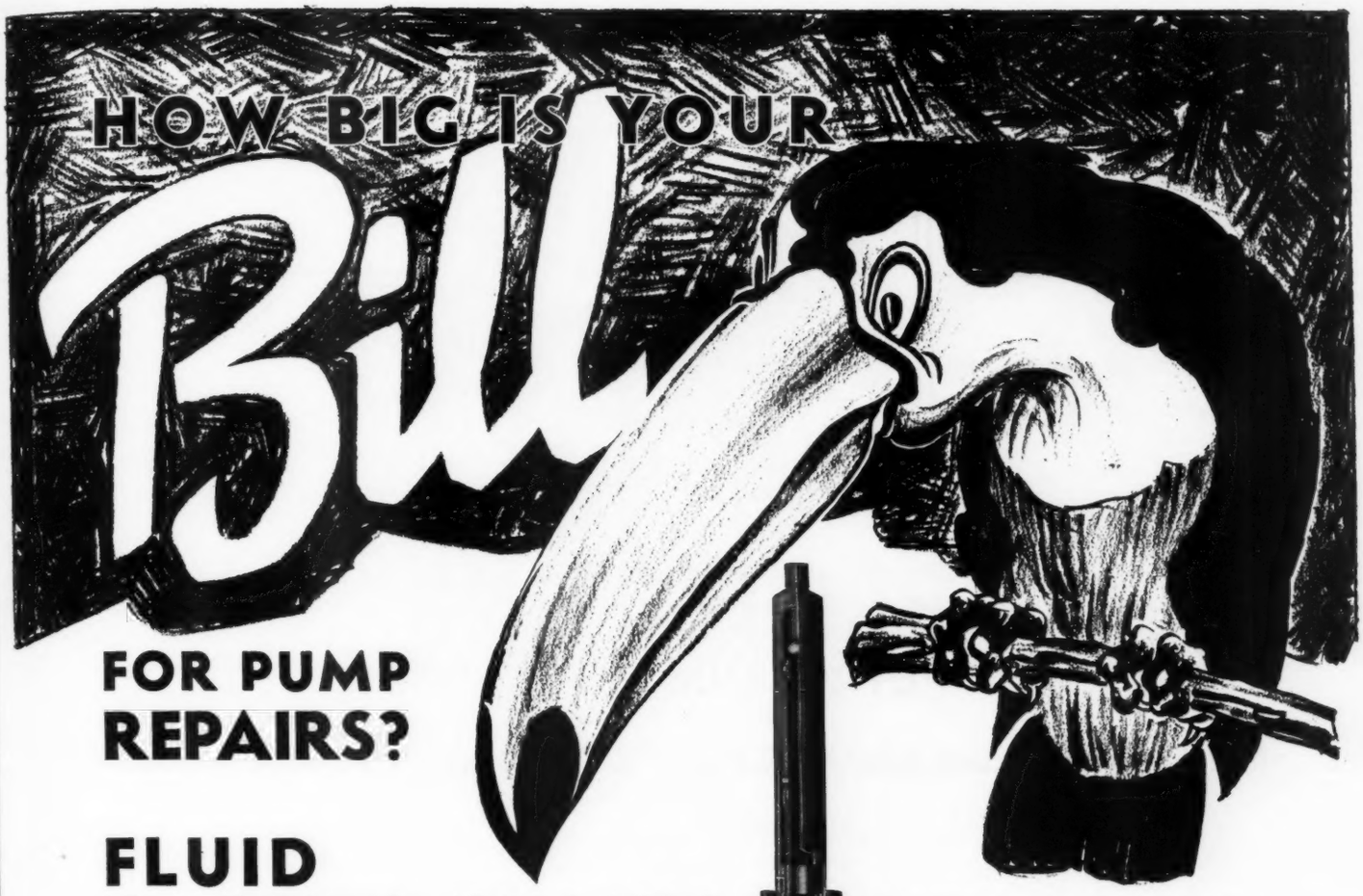

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FLUID PACKED PUMPS

Reduce DOWN-TIME— Cut Pumping Costs...

We don't claim magical properties for Fluid Packed Pumps, although their performance is remarkable enough. They won't produce more oil than the formation will give up. But they *will* stay on the job month after month, (many have pumped steadily from 3 to 6 years without a minute lost or a cent spent for repairs). The savings which Fluid Packed Pumps effect by greatly reducing down-time and pump repairs will seem magical to you when you analyze them.

Fluid Packed Pumps work so economically and efficiently under bad sand conditions, where water and mud cuts are large, in all kinds of oil, and in deep wells with low fluid levels, that many operators praise them to the sky—but forget that they give economical, efficient service under ordinary conditions, too.

The Fluid Packed principle is logical—and simple—and easily proved on your own lease. The long telescoping tubes have an annular clearance between them of about 20/1000″—ample to carry large quantities of sand without freezing or causing excessive wear. The fluid being pumped fills the channels, forming a packing that retards slippage and never wears out. The normal wear that occurs during a long life cannot defeat the Fluid Packed principle—your continued savings are protected.

FLUPACO GROOVE SEAL PUMPS

Flupaco "Producer" and "Volume Producer" pumps have the largest cross-sectional displacement area possible for an insert (rod) type pump. The "Producer", because of the insert feature, saves the down-time incurred in pulling tubing to make pump repairs—cuts the cost of producing from stripper and medium volume wells. The "Volume Producer" is especially adapted to deep, large wells and to wells of medium depth and volume.

Precision-made of materials specially selected and heat treated, Flupaco "Producer" and "Volume Producer" Groove Seal Pumps will save you money by reducing down-time and cutting pump repair costs. The initial cost, too, is low, making them economical for small production wells.

Refer to the Fluid Packed Pump Company section in your 1937 Composite Catalog, or write our nearest office for complete details.

DEPARTMENT OF GEOLOGY
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PETROLEUM REFINERS

WITH A VALUABLE LICENSE RELATING TO DECOLORIZATION, CLARIFICATION OR NEUTRALIZATION

Every Petroleum Refiner who purchases Acid Activated Clay produced by Filtrol Corporation has exclusive protection regarding its use. It is produced and packed under the "Super Filtrol" brand and the marking on the package includes the following assuring message:

> ***"The purchaser of this clay is licensed to employ it in the clarification, decolorization and neutralization of petroleum oil under the patents of Contact Filtration Company."***

This important and valuable license right which is extended to Petroleum Refiners does not involve any additional charge whatsoever . . . The established price of Super Filtrol remains unchanged regardless of this service.

Those interested are invited to make inquiry relative to their requirements and receive the benefit of the broad technical experience of our staff.

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